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THE AGE OF TERROR

*

THE LIVING HEDGE
ANGRY YOUNG MAN

*

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The English Philosophers

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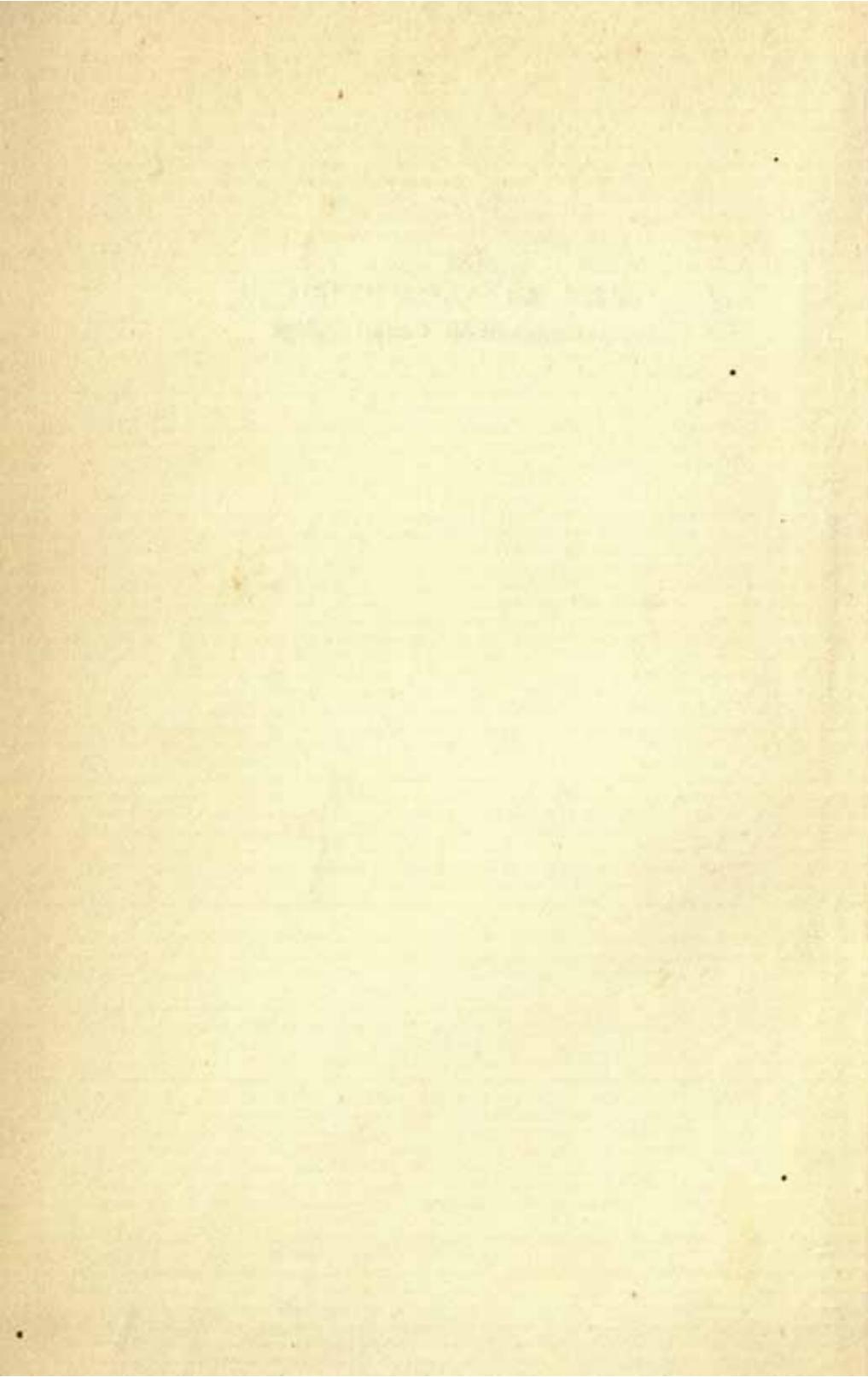
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For
ERROL and SYLVIA HARRIS
my colleagues of Mt. Carmel College



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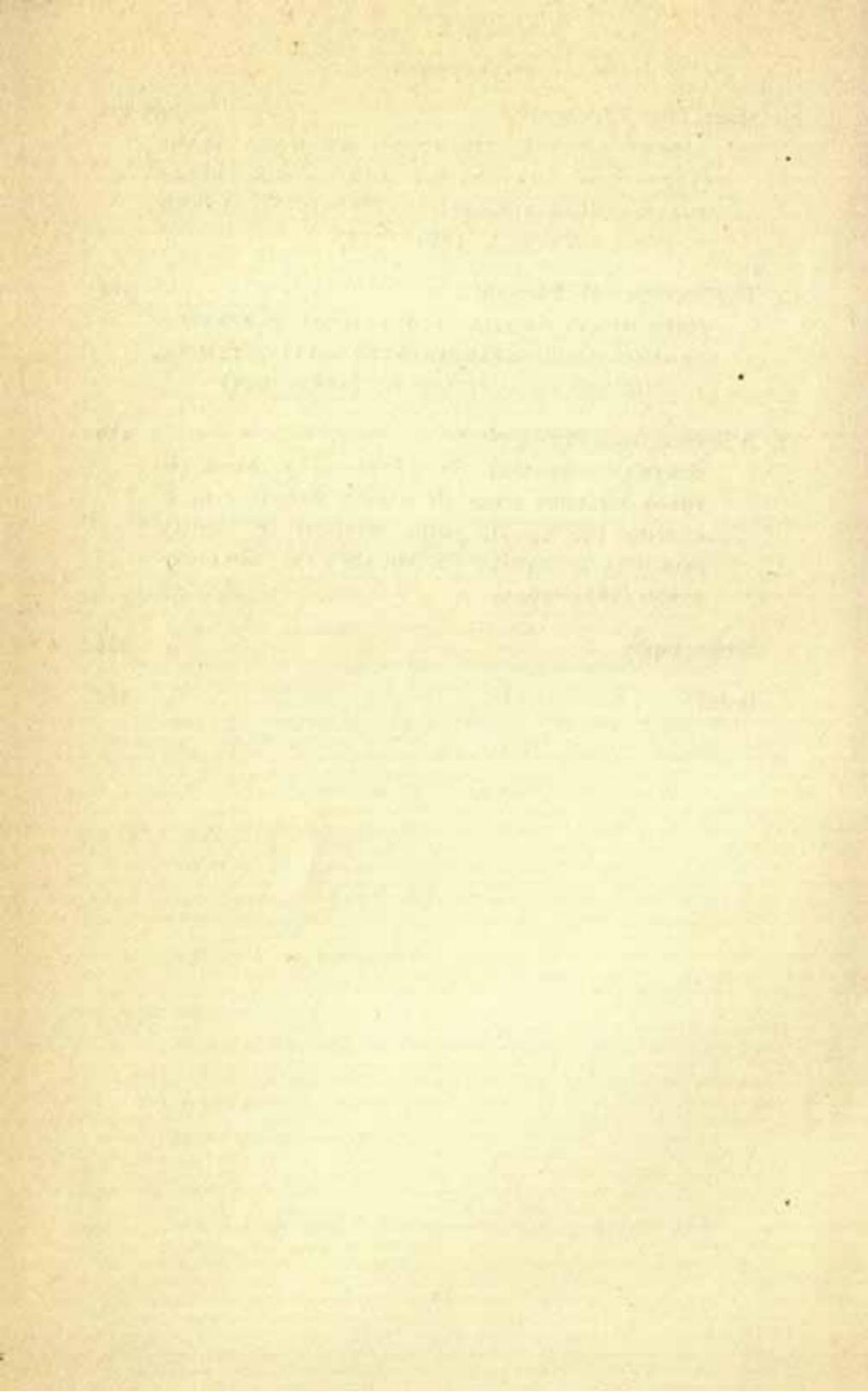
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In order to help both the general reader and the student to seek out the original texts, references have been given to popular editions, where these are known to me, as well as to standard or original texts. The title of the popular text (*Everyman*, *World's Classics*, *Thinker's Library*, etc.) is given in brackets on the first opportunity that occurs to mention it, together with the page number of the reference, but thereafter, in brackets, the page number only.

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Author's Preface

This work has its genesis chiefly in a series of lectures entitled 'Anthology of English Philosophy', which I gave through the European Service of the B.B.C. in the winter of 1950-1. Though the book is not a reproduction of the broadcasts, they formed the synopsis from which it was afterwards expanded. To some extent they have conditioned the work, especially perhaps the manner of its presentation. In a series which had the word 'Anthology' in its title, it was important to quote representative passages from the authors I was speaking about: the value of this in a historical study is so great as to need no justification or explanation, and I have continued the practice liberally throughout the book. In broadcasts of such a nature to European listeners, exposition of the doctrines of the philosophers had to take precedence over criticism of them; and to that policy too I have adhered, but not so rigidly as to destroy a personal approach. I must acknowledge immediately, having made this explanation, my gratitude to the English-speaking section of the European Service of the B.B.C., especially to George Steedman and my producer Barbara Crowther: without their enthusiasm and encouragement that series could never have been carried through so successfully, nor the present work written.

Now as to title: *English* or *British* philosophers? The broadest, but still inadequate adjective to embrace Pelagius the Romanized Briton or Celt, Anselm the Italian monk, Berkeley the Irish protestant, and Hume the Scottish Tory would be *British*. But though we talk, with propaganda aim, of 'The British Way of Life', and once talked of 'The British Empire', we have always spoken of *English* literature and impenitently included Robert Burns and Dean Swift within it. *English* is surely the proper cultural adjective, *British* the

AUTHOR'S PREFACE

political one. *British* philosophy has to me a touch of aggression in the sound of it which is entirely absent in *English* literature or *English* philosophy. So therefore let the title rest at 'The English Philosophers'. If any Scotsman, Welshman or fellow-Irishman is offended then let him sit down and rebuke me by writing the philosophy of his native country and I will be the first to read it.

The intention of the book, as of the broadcasts, has been to pick out the main threads of English philosophical development. Unless it was to become a mere catalogue of names, dates and titles I felt it better to discuss the main tendencies, and the principal works of the greatest names, at some length, rather than seek to cover every name and every work inadequately. I have stuck to the main philosophical and metaphysical stream and avoided falling too much into political philosophy or theology, despite the temptations; but where certain philosophers nevertheless brought these departments into the main stream I have not hesitated to deal with them fully: the Utilitarians are a case in point, I think. The important thing, I felt, was not to be pedantic, and to bring out the living thought of each century.

A work such as this is bound to mirror personal judgments, but I hope it is clear of prejudices, for I have striven to be fair and objective and have gone always to the writings of the philosophers themselves rather than to exegeses upon them. It is in the field of contemporary philosophy that the omissions are greatest, or at least that one is most conscious of them: that was inevitable and there would be no way of making good these omissions short of expanding the study to an unwieldy length, or writing another book. And so I must simply apologize for this and for the rest leave my history to speak for itself.

L. P.

July 1952

CHAPTER ONE

Heretics and Scholastics

PELAGIUS (c. 360-c. 420)

ALCUIN (c. 730-804)

ERIGENA (c. 815-c. 877)

ST. ANSELM (1033-1109)

THOMAS AQUINAS (1225-1274)

ROGER BACON (1214-1294)

JOHN DUNS SCOTUS (1266-1308)

WILLIAM OF OCCAM (c. 1300-1349)

At the end of the fourth century, when Britain was part of the Roman Empire, a monk out of the early British church made his way to Rome. His name, in all probability, was Morgan, which in Welsh means 'seaman', for in the Latin world we find him described as 'Pelagius', which means seaman, too. We know nothing about his life in Britain, and hardly much more about the Church of which he was part, but we do know that he gave birth to a heresy which set the continent about the ears.

He was most profoundly scandalized by the laxness of morals he discovered in Rome and unwilling to accept the argument that this was just a consequence of the unregeneracy of human nature for which allowance ought to be made by the Church. Like many a puritanical Britisher since, face to face with continental behaviour of which he disapproved, he put it down to lack of will-power. 'If I ought,' he said, 'then I can.' If a man did not wish to sin, then he need not. His will was given to him by God precisely so that he should be able to prevent himself from doing sinful things. And out of this shocked reaction to depravity came a great heresy which may never have been intended at all.

'Instead of regarding the commands of our illustrious King as a privilege . . . we cry out at God, in the scornful sloth of our hearts, and say, "This is too hard and difficult. We cannot do it. We are only human, and hindered by the weakness of the flesh." Blind folly and presumptuous blasphemy! We ascribe to the God of knowledge the guilt of twofold ignorance: ignorance of his own creation and of his own commands. As if, forgetting the weakness of men, his own creation, he had laid upon men commands which they were unable to bear. . . . God is thought of as seeking our punishment rather than our salvation. . . . No one knows the extent of our strength better than he who gave us that strength. . . . He has not willed to command anything impossible, for he is righteous; and he will not condemn a man for what he could not help, for he is holy.'¹

Pelagianism is best summarized as an assertion that there is no such thing as original sin. We are born without bias towards good or evil, and it is our free will which decides which direction our characters shall take. It is *man* who takes the initiative in his own salvation. What a modern ring there is in this pride in the dignity and stature of man! It is a doctrine, or heresy if you will, exhibiting itself in secular dress in thinker after modern thinker, from Jean-Jacques Rousseau to Bertrand Russell. And we must admit that there is something manly in the refusal of Pelagius to thrust on to the shoulders of God a responsibility which belongs to man:

'It is therefore, at my own option not to have a good inclination and not to do a good action; but it is by no means within my own power not to have the possibility of good. This possibility is inherent in me, whether I will or no; nor does nature at any time receive in this point an option for itself. Now the meaning of all this will be rendered clearer by an example or two. That we have the possibility of seeing with our eyes is no power of ours; but it is in our power that we may make a good or a bad use of our eyes. So again that I may, by applying a general case in illustration, embrace all, the fact that we have a possibility of accomplishing every good thing by action, speech, and thought comes from Him who endowed us with this possibility, and also assists it. Accordingly—and this is a

¹ 'Ep. ad Demetriadem', 16, ad fin. *Documents of the Christian Church*, Oxford, p. 74.

point which needs frequent repetition, because of your calumny of us—whenever we say that a man can live without sin, we also give praise to God by our acknowledgment of the possibility which we have received from Him, who has bestowed such power upon us. . . .¹

The reaction of St. Augustine to Pelagius was a sharp one, with marked consequences for European history. For it was the need Augustine felt to lay special emphasis on predestination, and the helplessness of man without God's grace, which led eventually to Calvinism, for example. Here is the root of Augustine's reply:

'A man's free choice avails only to lead him to sin, if the way of truth be hidden from him. And when it is plain to him what he should do and to what he should aspire, even then, unless he feels delight and love therein, he does not perform his duty, nor undertake it, nor attain to the good life. But to the end that we may feel this affection "the love of God is shed abroad in our hearts" not "through the free choice which springs from ourselves", but "through the Holy Spirit which is given to us".'²

It is not simply that man is equipped by God with the will not to do evil, but, according to St. Augustine, men 'will just because God works in them so to will'. Pelagius had argued to the contrary that God had given to man the *possibility* of doing this or that, but it rested with *man's* will whether he did so or not. But to Augustine man's will, by original sin, is an infirm will, and it is the special grace of God to bestow assistance upon man's weak will, that it may conquer its weakness and triumph in the pursuit of good. There is constant grace, a preventer grace, and it is by this grace that 'God makes men to will the good which they refused'. And does not God know beforehand what acts of grace are necessary to his purposes? 'Will any man presume to say that God did not foreknow those to whom he would grant belief? And if he foreknew this, then he certainly foreknew his own kindness, with which he vouchsafes to deliver us.'³

A synod in Carthage accused and condemned a disciple of

¹ 'Pro Libero Arbitrio' *apud* St. Augustine in *Anti-Pelagian Works of St. Augustine*, tr. Dr. Peter Holmes, Edinburgh, 1874, Vol. II, pp. 5-6 (Vol. XII of *The Works of Aurelius Augustine*, Ed. Marcus Dods).

² 'De Spiritu et Littera', 5, in *Documents of the Christian Church*, p. 77.

³ 'De dono perseverantiae', 35. (*Ibid.*, p. 80.)

HERETICS AND SCHOLASTICS

Pelagius, he himself was opposed in Palestine at first, then approved. Carthage carried the controversy forward with much bitterness until finally the Pelagians were denounced as heretics and came under the Imperial edict. It is often argued that the disputes of philosophers and theologians are remote from the cares and concerns of the common man: if, however, it is to be conceded that Lutheranism and Calvinism have their roots in this controversy among clerics, one could hardly ask for a clearer example of the influence of ideas on history.

It would be too fanciful to describe Pelagius, despite his great impact on Christendom, as the father of *English* philosophy. For one thing he was a member of a race which was almost wiped out by the invading English in the same century that Pelagius taught in Rome. But one is tempted to feel that there is something in his attitude which was to become typical of other philosophers of these islands in later centuries. How may it be put? A certain self-reliance? An impatience with subtlety, particularly over moral issues? A proneness to the rejection rather than the making of doctrine? We find these characteristics appearing again and again in the philosophers of these shores. And perhaps it is not an accident that so much English (in contradistinction to Scottish) non-conformity has been decidedly Pelagian in temper.

It was not until the ninth century that another philosopher, a still greater one, rose in these islands. And he was John the Scot—Johannes Scotus Erigena—born, probably, between the years 800 and 815, and who lived and studied in an Irish monastery. From the time of the downfall of Britain, and even before, Europe had been ravaged by invading Teutonic hordes. And Rome, after a thousand years of greatness in which she had come to conquer the known world, had been pulled down. Europe and the Mediterranean were plunged into the night of the Dark Ages. G. K. Chesterton wrote:

*When Caesar's sun fell out of the sky
And whoso hearkened right
Could only hear the plunging
Of the nations in the night.*

ALCUIN

*When the ends of the earth came marching in
To torch and cresset gleam,
And the roads of the world that lead to Rome
Were filled with faces that moved like foam,
Like faces in a dream.*

Only in the Eastern Empire, and in Ireland, both unravaged, were there peace, security, and learning still. Ireland was protected by double seas and nursed the earliest Christian learning in monasteries which seem to have been singularly free of ecclesiastical control and out of reach of Papal censure. Ireland was then far in advance of the rest of Europe, a civilized land where the Greek which had faded from the memory of almost every land west of Constantinople was still studied. These perhaps were the circumstances which brought the Irish monk Erigena to understand and sympathize with, not only Greek thought, but the Eastern church too. This thyme is a token of his feeling—

*Glittering Constantinople herself new Rome calls,
Antiquated Rome, from thy ancient walls
The splendour passes, there remains only pride
And the dark avarice with which thy history's dyed.¹*

In the eighth and ninth centuries the pagan Norsemen savaged Europe in raid after raid which seemed to throw the whole future of Christendom into question. Ireland was not exempt. Indeed, she was peculiarly exposed. And no doubt her scholars, like those of England, were not reluctant to bend their footsteps toward the more sheltered courts of Europe—a fertilizing return journey. Both English and Irish scholarship had become a source of envy on the continent. One much revered scholar was Alcuin: taught by the pupils of the Venerable Bede at the cathedral school of York, he became its head. The fame of his learning spread abroad. When he went to Rome in 780 he met Charlemagne at Parma, and Charlemagne persuaded him to come to his court and offered him the revenues of great abbeys as an inducement. Alcuin began the re-

¹ *Constantinopolis florens nova Roma vocatur,
Moribus et muris Roma vetusta cadit.
Transiit imperium, mansitque superbia tecum,
Cultus avaritiae te nimium superat.*

HERETICS AND SCHOLASTICS

vival of learning among the Franks, founding both the palace library and the palace school, where young noblemen bent over their books and their slates. Indeed Alcuin began that restoration of cultural pursuits, that pursuit of systematic learning, which was to flower some centuries later in the vigorous rationalism of medieval scholasticism. One of Alcuin's works, *The Rhetoric of Alcuin and Charlemagne*, marks, among other things, the revival of European jurisprudence. The quotation which follows comes from the section where Alcuin instructs Charlemagne on the dangers of sophistical discourse. We shall have occasion later to look at criticisms of the syllogistic method and may therefore now take pleasure in this early jest about it. Alcuin has been reluctant to explain sophistry, but Charlemagne presses:

CHARLEMAGNE: I do not see what honour you do me when you refuse to answer my questions.

ALCUIN: May I then adopt the role of cross-examiner?

CHARLEMAGNE: Why not? To question wisely is to instruct . . .

ALCUIN: That is true. Now, if one of us is he who questions and the other, he who replies, then it follows that you who question are not the same one as I who reply.

CHARLEMAGNE: In no sense the same.

ALCUIN: What are you?

CHARLEMAGNE: I am mortal.

ALCUIN: You see now how you can get the better of me?

CHARLEMAGNE: How?

ALCUIN: If you get another to agree that you and he are not the same, and get him also to agree that you are mortal, then he is forced to admit that he is not a mortal.

CHARLEMAGNE: The admission follows.

ALCUIN: But how many syllables has *mortal*?

CHARLEMAGNE: Two.

ALCUIN: Then you are two syllables!¹

Erigena, in his turn, went to France, to the court of Charles the Bald, who made him head of the *schola palatina* which had been Alcuin's care. A very firm friendship must have grown up between Charles the Bald and the Irish scholar if one story which has come

¹ *The Rhetoric of Alcuin and Charlemagne*. Translated with an Introduction, and the Latin Text, by W. S. Howell, Princeton, 1941, pp. 129-31.

down through William of Malmesbury is to be believed. The king, offended by the table manners of Erigena, asked him 'Quid distat inter Scottum et sottum?' John the Scot retorted, 'Tabula tantum!'

It was believed in those days that the famous Abbey of St. Denys in the neighbourhood of Paris had been founded by Dionysius the Areopagite, that same one who was converted by St. Paul when he preached on Mars Hill in Athens. 'Certain men clave unto him, and believed,' *Acts* tells us, 'among the which was Dionysius the Areopagite.' A number of works attributed to him and preserved by the Abbey, were given to Erigena to translate. The translations were sent to Pope Nicholas in 860 and provoked the comment of his librarian Anastasius, no mean scholar, that he was astonished that a man from a remote and barbarous country could have come to possess such a profound knowledge of Greek. The neoplatonic works of the pseudo-Dionysius had much influence upon the philosophical thought of Erigena himself, and his translations enriched the mystical Christian stream in Europe.

Erigena was soon involved in theological controversies, but his interventions on the side of authority were the kind of cure which is worse than the disease. In a dispute over predestination and free will between Hincmar, the Archbishop of Rheims, and the obstinate monk, Gottschalk, Erigena took the side of the Archbishop. He described Gottschalk's predestinationism as *monstrosum, venenosum, mortiferum* dogma: madness, too. In his tract, *On Divine Predestination* (851), Erigena foreshadowed his ultimate philosophical position. He argued that evil had no real being. Although, he explained, we are accustomed to speak of the *will* of God, the *love* of God, and the *wisdom* of God, as if they were separate faculties of God, the essence of God is single, and it is simply human inadequacy which compels us to make these distinctions in the nature of God. Divine predestination (and therefore Divine predestination to eternal damnation) is just such an act of isolating what really cannot be isolated. It is a subjective human conception which cannot belong to God as he really is. God cannot will anything but what is good and real, and therefore—*peccatum, mors, miseria, a Deo non sunt. Eorum igitur causa Deus non est.* Sin is not real: it is a lapse from good, the absence of good. The eternal fire is not to be understood literally. The righteous will rejoice in the same element which will cause the

wicked to suffer, as light delights the healthy eye and gives pain to one which is diseased.

As if these Pelagian tendencies were not enough, Erigena also maintained that reason was the equal of authority. Since both are of God, and sources of God's truth, they cannot really conflict. But if they seem to, reason is to be preferred. True religion is true philosophy, but the converse must also be grasped, that true philosophy is true religion.

'Authority proceeds from right reason, not reason from authority. . . . Rightful authority seems to me nothing else than truth discovered by the power of reason, and committed to writing by the holy Fathers for the benefit of posterity.'¹

That pronouncement from his principal philosophical work can be matched by this in *De Divina Praedestinatione*: 'For what is the study of philosophy other than the explanation of the rules of that religion by means of which God, the highest and principal Cause of all things, is made the object of humble worship and reasonable enquiry?'.²

In his view of the Eucharist, Erigena was also heretical. He spoke of the sacrament as not truly the body and truly the blood of our Lord but only a memorial of these things—*sed tantum memoria veri corporis et sanguinis Ejus*.

It is not surprising that the Synod of Valence condemned his teachings in the year 855. What perhaps is surprising is that they described them as 'Scots porridge'. And as Jerome had long before in Palestine spoken of one of the disciples of Pelagius as 'stodged with Scots porridge' speculations about the antiquity and ubiquity of the Scottish national dish are inevitably aroused among the curious.

Erigena's unorthodoxy caused Pope Nicholas I to summon him to Rome, but Charles the Bald ignored the papal command. There is ground for believing that when Charles died Erigena took refuge in England, an England which Alfred, lover of learning, had then pacified by the defeat of the Danes at Ethandune, a battle which was a turning-point in history. According to William of Malmesbury, Erigena took refuge at the Abbey of Malmesbury. This makes

¹ 'De Divisione Naturae', 1, 69. From *Studies in John the Scot*, Alice Gardner, Oxford, 1900, p. 16.

² *Ibid.*, i. 1, *Studies in John the Scot*, p. 17.

ERIGENA

sense, for the abbey had been founded by an Irish monk and perpetuated the Irish culture in which Erigena had been raised. His end, if this is true, is unique in the annals of philosophers, for his enraged pupils stabbed him to death with their pens.¹

On the Division of Nature is Erigena's monumental work. It dates from 865. It is in the form of a dialogue between a Master and a Disciple and characteristically it bore a Greek title: *Periphyseon*. It consists of five books and runs to a quarter of a million words: in any century quite a literary undertaking. It is remarkable also for the absolute independence of its thought in an age barren of genius and scholarship. For comparisons with its range and scope one must go back to the works of the neo-platonists or forward to the writings of Hegel. Just because of its isolation and its failure to represent its age it is difficult to assess its influence. In 1225 Pope Honorius III issued a bull against it which charged all to make a diligent search for the book and to send copies to Rome to be solemnly burnt, or to burn the book themselves, and said that those who failed in this duty 'have thereby incurred the sentence of ex-communication, nor shall they escape the abomination of heresy'. The Cistercian order was either exempt, or exempted itself from this order, for it seems that copies survived in their monasteries and side by side with a verbal tradition exercised influence upon the growth of Christian mysticism in Germany in particular. Meister Eckhardt, for example, continued the mystical tradition of Dionysius and Erigena. For the rest, *De Divisione Naturae* sank out of sight. It was not even remembered when the Index was drawn up by the Council of Trent. Its first revival came when it was printed in Oxford by Thomas Gale in 1681. This led to its inclusion on the Index in 1685. It therefore exercised little or no influence upon the revival of learning, although in spirit it belonged to the Renaissance.

On the Division of Nature describes the fourfold division of Nature, as (a) creating and not created; (b) created and creating; (c) created and not creating; (d) not creating and not created. The fourth division is not to be regarded as the negation of the rest, but as the end of all. It is God, of course, who 'creates but is not created', but the

¹ Not the innocent modern implements, but styles, those sharp-pointed instruments for writing on wax tablets, familiar to antiquity.

final state to which the cosmos is moving is the return of all creation to God, to the everlasting tranquillity of 'not creating and not created'.

It is in the second division that the Logos-Christianity of Erigena is most evident: for that which is created and is also creating is the *Logos*. The *Logos* is the creative word breathed forth by God and it constitutes a medium between God and the created thing. Embodied in it are the primordial ideas which govern existence—goodness, life, wisdom, truth, intelligence, reason, virtue, justice, health, existence (*essentia*), and so forth: there is more than one list. Their role as governors of creation recalls the *Timaeus* where Plato speaks of two natures, 'one . . . a pattern intelligible and always the same; and the second . . . the imitation of the pattern, generated and visible'. Erigena insists with all his power upon the unity of God, and inevitably he met the difficulty which faces all idealists—how does the One manifest itself as the Many? His conception of created and creating powers standing between God and 'all that is known in generation, in time and in space' to some extent helps to bridge the gulf between the One and the Many. Nevertheless the difference between God and the *Logos* remains obscure.

Erigena includes in his natural categories both the *things that are* and the *things that are not*. And he includes in his modes of *non-being* that which by its nature escapes the comprehension of man whether through his senses or his intellect—and this includes the essence of things. Rather in the manner of Locke he argues that what we know of things through our senses are the accidentals of appearance. We know things by quality, quantity, matter, form, difference, time and space. But the underlying substance to which these belong is unknowable. Included in *non-being* also is all *potential* existence. All men who will ever exist are potentially present in the first man: but they do not actually exist. They are not present to us. Their mode of being is, to put it paradoxically, *non-being*.

This approach to reality bears on the nature of God. For God is not one of the categories of being apprehended by the senses or the intellect. He must stand, therefore, above the ordinary divisions of created things as, not simply Being, but Super-Being. Yet to describe him by superlatives, as super-*essentia* or super-*natura*, is in truth to say that he is not being or nature as ordinarily understood.

It is to define God by what he is not. God as the beginning, middle and end of all things is unknowable to men or angels. He is even unknowable to Himself, for how could he define Himself without definition, and how is definition possible without limitation, and how can the Infinite and Eternal be limited?

'God does not know Himself,' Erigena wrote, 'what He is, because He is not a *what*; in a certain respect He is incomprehensible to Himself and to every intellect.' The unknowable God created all things out of nothing. But what does 'nothing' mean in this context? The *nihil* anterior to creation is not simply the absence of being, but its total negation: the negation of all that can be said or thought or experienced through the senses or the intellect about creation. All the accidents of creation are limiting things and what we mean when we say that God is One is that He stands in opposition to all limitations. He is therefore the *negation of all that is*. God, unknown both to human and angelic intelligence, the supernatural and superessential Being, is rightly called *nothing*. Therefore it follows that creation out of nothing is creation out of Himself: and the final end or resolution of creation is the return of all things to the state of 'not creating and not created' which is the infolding of them again into God. Neither the consistency, nor the Christian setting of these arguments of Erigena's, nor his acceptance of revelation, could lessen for his age, an age steeped in the personal, paternal and filial aspects of God derived from the scriptures, the shock of blasphemy.

The pantheism of which Erigena is usually, and with some justice, accused, enters at the point where Erigena finds it difficult to separate the creator from his Creation. Creator and creation are one and co-eternal. The creation was not an accident, because God is not capable of accidents. Therefore, if creation was *necessary* to God, there was no God prior to creation. If, with God, to will and to do and to be capable are all one thing, God when he creates, creates Himself. Creator and creation are one: the essence of all things is nothing but the knowledge of them in the mind of God. *Nihil enim est aliud omnia essentia, nisi omnium in divina sapientia cognitio.*

One comes, in the end, by this analysis, to a conception of the universe as issuing forth from the necessity of God in a glorious unfolding of divine Self-creation, and returning in the end to the

nihil of God, like some beautiful and inexplicable firework display against the velvet of night. It is quite remote from the primitive Christian conception of the nature of the universe, and of the relationship of man to the Father and the Son. Yet *Erigena* did not think of himself as heretical: he cast his thought in an orthodox mould and sought to establish it at every point in the light of Biblical teaching. He owes much to *Gregory of Nyssa* and *St. Augustine* as well as to the pseudo-*Dionysius*. His genius it was to develop into a complete system the *Logos* teaching begun in the Fourth Gospel, at a time when the Greek learning which supported it was about to vanish for six centuries. What he ended by teaching made difficult the belief in the direct, personal intervention of God in history which is the message of the Christian gospel. It was this which must have invalidated his arguments for those of his contemporaries who had the wit to study and understand him. They were not many, as we have seen. History had to wait for *Hegel* before an idealist philosopher, for whom his system could have validity, arrived on the scene. And in *Hegel* many of the teachings of *Erigena* express themselves with peculiar force.¹ And after *Hegel* perhaps only *Whitehead* with his doctrine of the Divine as the ground of all limitation, itself beyond the rational since it is the ground of the rational, comes as close to the ninth century genius.

Erigena was a solitary figure. Not for two centuries does another theologian of these shores make a contribution to Christian scholarship; that man, *St. Anselm of Canterbury*, was as it happens an Italian, and in philosophy he was a disciple of *St. Augustine* and therefore, like *Erigena*, under the influence of Platonic and neo-Platonic ideas. He advanced the famous ontological argument for the existence of God. This runs as follows: I have an idea of a Being than which nothing greater can be conceived; this idea is

¹ 'The whole conception of dialectic as grounded in the nature of things, that the rational is the real, and the real the rational, that thought and being are essentially one; that pure Being in its utter lack of distinction, is equivalent to Non-Being; that every higher category is the truth of the lower, all through the scale of existence, and that the Absolute Idea is the final truth of which all lower forms of thought and of being are partial expressions—all these are express doctrines of *Erigena* which are repeated in *Hegel*.' *Henry Bett: Johannes Scotus Erigena: A Study in Medieval Philosophy*, Cambridge, 1925, p. 195. I acknowledge my debt to this work in this section.

that of the most perfect, complete, infinite Being, the greatest conceivable: now an idea which exists in reality is greater than one which exists only in conception; hence if my idea is of the greatest, it must exist in reality. Accordingly, God, the perfect Idea, the perfect Being, exists. Which, put in other words, is to say that a conception of the Perfect would be imperfect unless there existed a reality of which it was the conception.

Anselm of Canterbury, who died in 1109, stands out as one of the opening figures of the great age of scholasticism. His aphorism, *Credo, ut intelligam*: I believe in order to understand, expresses the spirit of medieval scholasticism which was preoccupied with the construction of logical systems whereby learning, particularly ancient learning, was adjusted to theology. Philosophy was, indeed, the handmaid of theology. And this was not surprising when Christianity was triumphant over Europe as a total way of life, as a comprehensive social structure, not simply as a way of worship. The barefoot pilgrimage of penitence of the excommunicate Emperor Henry to the Pope, at Canossa in 1077, was symbolic of this earthly triumph of the Church. It was as inconceivable that thinkers should function outside the theology of the times as that they should maintain themselves in economic independence of the Church. The medieval philosophers were priests, friars, canons and doctors of the Church.

Nevertheless, a great stimulus to the role of philosophy in medieval learning was given by the rediscovery of Aristotle. Alexander of Hales, a thirteenth century figure, is generally held to be the first scholastic to base his teachings upon the whole of Aristotle's writings. In the twelfth century the *Organon* and the *Analytics* of Aristotle were known to the newly founded University of Paris, but Oxford and Cambridge in the next century were familiar with the general body of Aristotle's works. His genius made this century the golden age of scholasticism, crowned by the work of the angelic doctor, St. Thomas Aquinas, who aided and promoted the translation of a less corrupt Aristotle from manuscripts taken at Constantinople during the fourth crusade.

The *Summa contra Gentiles* and *Summa Theologiae* of St. Thomas contain a philosophical system which is still, despite all attacks on it, the philosophy of the Roman Catholic Church. His general pur-

pose, he declared, was to announce the truth of the Christian faith. But, he argued, he was compelled to have recourse to natural reason since the gentiles do not accept the authority of the scriptures. Natural reason cannot establish all aspects of the faith. It can prove the existence of God and the immortality of the soul, but not the Trinity or the Incarnation. What can be demonstrated is in accordance with the Christian faith, and nothing in revelation will be found contrary to reason. Therefore, what he felt free to embark on was an Aristotelian system of proof of the existence of God, in order to support the body of Christian theology with a framework of Aristotelian metaphysics.

St. Thomas argued that essence was a different thing from existence and only in God, the unique and primary reality, were essence and existence the same thing. Everything which belongs to any being arises, he argued, either from the principles of that being's nature, 'as risibility in man', or it comes to the being from some exterior source 'as light in the air from the influence of the sun'. But it would hardly be reasonable to argue that the being's own existence came from itself, for then it would call itself into existence, which is impossible. Every thing, therefore, in which essence and existence are not identical must owe its existence to another. Unless we are simply to produce an infinite series of causes we must acknowledge a First Cause of the existence of all things. The First Cause is God. It was an exegesis on Aristotle which was to mould European thought for many centuries to come.

Yet the Angelic Doctor, after all, was of the Dominican Order: and between Dominicans and Franciscans there was little love lost, and at Oxford, Franciscan friars formed a school of philosophy which, as time passed, became increasingly critical of Dominican scholasticism. The great John Duns Scotus and William of Occam, both members of the Franciscan school, began a line of argument which broke down the 'realism' of the Middle Ages. According to that realism, abstract or general terms, or *universals*, were given a reality prior to, and superior to, that of actual physical things, as for example in St. Thomas, where essence is prior to, and superior to, existence. Occam, on the contrary, came to argue that 'singulars', or individual things or existents, alone were realities, universals having no existence outside the mind. Occam, therefore, was a

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nominalist, i.e., one who believed that *universals* were mere *names*. St. Thomas, like Erigena, was a realist. But whereas Erigena had based his realism on the platonic doctrine of *ideas*, Aquinas based his upon Aristotle's doctrine of forms which, being summarized, is that every object in the world of sense constituted a union between two principles, *matter* and *form*. But before we look at the important contribution made to this controversy by the English Franciscans, it is necessary to speak of the work of the pupil of the learned Grosseteste, Friar Roger Bacon, who was born in 1214.

Bacon was a John Bull kind of figure, tough, inventive, assertive, irascible, who became a legend in the course of centuries. Because he wrote upon alchemy and astrology, and had a keen insight into what it was possible for man to do physically with the common materials around him (even in his rude age), his superstitious contemporaries regarded him as a magician capable of conjuring up the devil. A popular Elizabethan romance about him, *The Famouse Historie of Fryer Bacon*, tells, almost word for word from Bacon's own writings, of the things which men might manufacture:

'I will speak onely of things performed by art and nature, wherein shall be nothing magical: and first, by the figuration of art, there may be made instruments of navigation without men to rowe in them, as great ships to brooke the sea, only with one man to steere them, and they shalle sayle far more swiftly than if they were full of men: also chariots that shall move with an unspeakable force, without any living creature to stirre them. Likewise, an instrument may be made to fly withall, if one sit in the midst of the instrument, and doe turne an engine, by which the wings being artificially composed, may beate the ayre after the manner of a flying bird. . . . By art also an instrument may be made, where with men may walk in the bottom of the sea or rivers without bodily danger: this Alexander the Great used (as the ethnick philosopher reporteth) to the end that he might behold the secrets of the seas. But physical figurations are farre more strange: for by that may be framed perspects and looking-glasses, that one thing shall appeare to be many, as one man shall appeare to be a whole army, and one sunne or moone shall seem divers. Also perspects may be so framed that things farre off shall seem nigh unto us: with one of these did Julius Caesar from the sea coasts of France marke and observe the situation of the castles

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in England. Bodies may also be framed that the greatest things shall appear the least, the highest lowest, the most secret to be the most manifest, and in such like sort the contrary. Thus did Socrates perceive that the dragon which did destroy the citie and countrye adjoining, with his noisome breathe, and contagious influence, did lurke in the dennes betweene the mountaines: and thus may all things that are done in cities or armies be discovered by the enemies.¹

Bacon was credited with the invention of gunpowder, with knowledge of spells to conjure up the dead, and with having created a talking head of brass. The last pages of the *Famouse Historie* show him abandoning his magic, burning his books, proclaiming in the spirit of Prospero that all his charms are overthrown and retiring to a cell built into the wall of his church. Dr. A. G. Little has unearthed a legend of Friar Bacon as old as 1385 in which one, Peter of Trau, of Dalmatia, speaks of Bacon building a bridge from England to the continent 'by natural condensation' of the air, and with the invention of mirrors by which the deeds of anyone in any part of the world could be observed.²

If Roger Bacon, the *doctor mirabilis*, by his very practical interests and activities, encouraged belief in his magical powers in an age which knew no science, the real man was far different from the fly-by-night wizard of legend. He was independent, critical, insulting to those he disagreed with, truculently at war with authority and public opinion. 'Whatever seems true to the many, must necessarily be false,' he said, and just as bitterly—'this is affirmed by our superiors; this is the customary opinion; this is the popular view; therefore it must be admitted.' He attacked St. Thomas as a corrupter of philosophy and was most irritated to find that the students in the schools of Paris 'cleave to Aquinas as an angel', believing that the last word had been said by him in Christian philosophy. But future generations, Bacon warned his contemporaries, will know the extent of our ignorance.

What he asked for, in effect, was a truce to the word-spinning of scholasticism and the use, instead, of scientific methods of ascer-

¹ Op. cit.

² *Roger Bacon* by A. G. Little, D.Lit., *Proceedings of British Academy* (1928), Vol. XIV, p. 267.

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taining the truth: his later years were dominated by this search. At the command of the Pope he wrote three works: *Opus Majus*, *Opus Minus* and *Opus Tertius*. In the first and greatest of these he said, astonishingly in advance of his times:

'There are two modes in which we acquire knowledge, argument and experiment. Argument shuts up the question, and makes us shut it up too; but it gives no proof, nor does it remove doubt, and cause the mind to rest in the conscious possession of truth, unless the truth is discovered by way of experience, e.g. if any man who had never seen a fire were to prove by satisfactory argument that a fire burns and destroys things, the hearer's mind would not rest satisfied, nor would he avoid fire; until by putting his hand or some combustible thing into it, he proved by actual experiment what the argument laid down; but after the experiment had been made, his mind receives certainty and rests in the possession of truth, which could not have been given by argument but only by experience. And this is the case even in mathematics, where there is the strongest demonstration. For let any one have the clearest demonstration about an equilateral triangle without experience of it, his mind will never lay hold of the problem until he has actually before him the intersecting circles and lines drawn from the point of section to the extremities of a straight line. He will then accept the conclusion with satisfaction.'¹

It follows that *experimental* science is necessary for the verification of truth:

'This science has three great prerogatives in respect to all other sciences. The first is—that it investigates their conclusions by experience. For the principles of the other sciences may be known by experience, but the conclusions are drawn from these principles by way of argument. If they require particular and complete knowledge of those conclusions, the aid of science must be called in. It is true that mathematics possesses useful experience with regard to its own problems of figure and number, which apply to all the sciences and to experience itself, for no science can be known without mathematics. But if we wish to have complete and thoroughly

¹ 'Opus Majus', ii. 167, ed. Bridges (from: *Roger Bacon, the Philosophy of Science in the Middle Ages*, Robert Adamson, Manchester, 1876.)

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verified knowledge, we must proceed by the methods of experimental science.¹

It was hardly surprising that a friar who showed such an innovating spirit should find himself unpopular. Dr. Little, in that lecture to which I have already drawn attention, suggests that too much should not be made of the legend of his persecution. 'It is generally said or supposed that Roger Bacon was persecuted in his lifetime and neglected after his death. It is at least as true to say that he was honoured in his lifetime and studied after his death. Is there any other instance of a medieval thinker receiving a command from the reigning pope to send him his works, not because their orthodoxy was suspected, but because they might suggest remedies for the evils from which the world was suffering?'² Nevertheless, it is also true that in 1278 his books were condemned by the General of the Order and that he spent fourteen years in prison—'by the advice of many friars condemned and reprobated' for theology which contained novelties—and died in the year of his release.

The great John Duns Scotus, *doctor subtilis*, deserves to rank in the history of scholasticism with Friar Aquinas. Like him he was the creator of a system and founder of a school. Scotism and Thomism were rival scholastic philosophies. Scotus was born in the village of Duns, in Scotland, in 1265. He became a Franciscan and studied at Oxford, where he lectured on the *Sentences*. He spent several years in Paris as a lecturer, and there he received his master's licence. We know little more about his life except that he died at Cologne in 1308 at the age of forty-three.

In general, and certainly in intention, the Franciscan school at the time of Scotus sought to defend scholasticism from the innovations of St. Thomas. But the consequences of the defence were to prove more damaging than the attack. The modified realism of Scotus was to lead to the searching criticism of William of Occam which, in effect, brought the scholastic age to an end. Realism in the scholastic sense, I must point out again, contends for the independent existence of *universals*, which determine the *singulare*s with which man is confronted, particularly in sensory experience. What is the relation between *universals* and *singulare*s? Scotus taught the doctrine of

¹ *Ibid.*, ii, 172.

² *Proceedings of the British Academy*, Vol. XIV, p. 265.

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formal distinction. Augustinian scholars recognized the extreme difficulty of showing *how we know*, of how we arrive at the truth in the face of the constant flux of impressions received by the senses. This flux makes it difficult or even impossible to perceive the permanent principles inherent in things. Augustinian scholasticism had recourse to the argument that the mind is able to distinguish between the true and the false by the path of inner illumination. The theory had very obvious value in relation to Divine revelation but could only lead to extreme scepticism if sensory experience came to be rejected as a path to true knowledge. Duns Scotus, like the Aristotelians, believed this Augustinian doctrine to be erroneous. He recognized the difficulty of making sense of fluctuating reality, but argued that the human mind is in possession of principles which guide it in the ascertainment of truth and the detection of error, though he rejected the doctrine of illumination to account for them.

Here is what he has to say about it:

'But will not the understanding err in this knowledge of principles and conclusions, if the senses are deceived concerning all the terms?—I reply, that with respect to this knowledge the understanding does not have the senses for cause, but only for occasion, for the understanding cannot have knowledge of simples unless it has received that knowledge from the senses: still, having received it, it can compound simples with each other by its own power; and if from the relation of such simples there is a combination which is evidently true, the understanding will assent to that combination by its own power and by the power of the terms, not by power of the sense by which it receives the terms from without.—Example: if the reason of whole and the reason of greater are received from sense, and the understanding compounds the following: *every whole is greater than its part*, the understanding by its own power and that of these terms assents indubitably to this combination, and not only because it sees the terms conjoined in the thing, as it assents to the following, *Socrates is white*, because it saw that the terms are united in the thing.—Moreover, I say that if all the senses were false, from which such terms are received, or, what would lead even more to deception, if some senses were false, and some true, the understanding would not be mistaken concerning such principles, because it would always have in itself terms which were the cause of

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truth: just as, if the species of whiteness and blackness had been impressed miraculously in dreams on one blind from birth, and if they remained subsequently in waking, the understanding abstracting from them would compound the following proposition, *white is not black*; and the understanding would not be deceived concerning this, even though the terms be received from erring sense; for the formal relation of the terms to which it has reached, is the necessary cause of this negative truth.'

He passes on in the same passage to demonstrate that the experience of the senses is not illusory. We do have some real certitude concerning things 'known by experience'.

'Concerning the second type of knowables, namely concerning things known through experience'—as against formal distinctions, or relations—'I say that although experience is not had of all singulars, but of a large number, and that although it is not always had, but in a great many cases, still one who knows by experience knows infallibly that it is thus, and that it is always thus, and that it is thus in all, and he knows this by the following proposition reposing in the soul, *whatever occurs as in a great many things from some cause which is not free, is the natural effect of that cause. . .*'¹ Which seems to be as good a definition of induction as any.

In the notion of principles he is at one with realism. But it is in his definition of the principles that he begins to part company with it. For to strict realism, universals are real entities, independent of singulars: the universe is dualist. Scotus moves part of the way towards a monist conception of the universe. He regards the principles, as we have seen, as part of the equipment of our natural understanding. For him, they were *formalitates*—that is to say not simply a logical system of the mind, or a system of universals apart from singulars, but the properties or relations discovered in things. They are the general qualities of things, which partially describe them: they are rather like those eternal essences which Santayana describes as distilled from particular experiences.

The importance of this line of attack becomes clear when Scotus argues that these formal distinctions cannot exist apart from indi-

¹ 'Commentaria Oxoniensia ad IV Libros Magistri Sententiarum' from *Selections from Medieval Philosophers*, Vol. II. Ed. and tr. Richard McKeon, New York, 1929, pp. 326-7.

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vidual things except as a mode of description. Form and matter are indissolubly welded in the thing. And here, indeed, an original doctrine begins to emerge. Is the nature of a thing due to its genus? Is it, that is to say, simply a broken-off fragment of a general being, with its explanation to be found in its essence? Or is it undifferentiated matter organized by the independent principle of form? Scotus taught that each thing is in a sense unique: it *is* in its individuality: it is *not*, so to speak, matter poured into a previously determined form.

'It is an *ultima realitas entis*. The individual thing is not composed of matter and form but of *this* matter and *this* form. It is one, incommunicable, and *per se existens*. The stress of the Scotists on individuality sounds a new note in speculation. It promoted in metaphysics and natural philosophy interest in particular phenomena. This movement away from a preoccupation with universal entities towards a concern with individual items marks a turning-point in the history of western thought.'

Such is the judgement of Meyrick Carré.¹

In theology the importance of Scotus lies in the emphasis he placed upon Will, both the all-powerful Divine Will, and the free-will of the individual. There are two problems here. The Aristotelian cosmology is not conceived in the Christian mould. Christian revelation speaks of an act of creation, by the free will of God, by which the universe and man are brought into being, and then of a second act by which God became man, moved on earth and was crucified by men, and brought them redemption. But patristic Christianity possessed no native learning. The faith was Christian, the philosophies of the early Christian world, Greek. Despite their pagan origin the philosophies of Plato and Aristotle were marvelously sympathetic. It could not be imagined that they were not also of God. The Augustinian age was the age in which Plato was assimilated into the Christian tradition, the scholastic age the one in which Aristotle and revelation were brought into conformity.

In the Aristotelian manner, by the exercise of natural reason, man can arrive at the conception of a primal, undifferentiated Being out of Whom, in the manner of Erigena's conception of the self-

¹ In *Phases of Thought in England*, Oxford, 1949, p. 148. I am also indebted to his *Realists and Nominalists* in these pages.

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creation of God, the orders of existence arise. Inherent in such an approach is that same *necessity* of which Erigena speaks when he argues that God could not be the supreme and perfect Being that He is if His creation were only potential and not actual. In this view, *necessity* rather than will governs the universe. But this was the doctrine which Scotus specifically rejected in favour of the *revealed* view, that is of the creation as the act of God's free will.

This bore upon the question of human free will. Evil, for Erigena, was the absence of good, a negation, a lapse. So that evil was *contrary* to the will, which must always conform to the good that it knows. This was a doctrine inherent in scholasticism too. But Duns Scotus argued that man's will could reject the choice made by his reason: man can consciously refuse the good he knows to be good and cleave to the evil he knows to be evil. It is not the intellect which governs the will, but the will which governs the intellect. This is important for knowledge, for there can be no knowledge without an act of attention, which is, of course, an act of will, just as there can be no act of will without a known object with which it is concerned. And as for the relation of reason to faith, apart from the voluntarism Scotus awards both to God and man, his teaching was much the same as that of St. Thomas.

William of Occam, first the pupil of Scotus, passed from the modified realism of Scotism to complete nominalism, to the rejection of all universals and a belief that only singulars existed. Occam, the *doctor invincibilis* and *venerabilis inceptor* of Scholasticism, was born at Ockham in Surrey between 1290 and 1300. He joined the Franciscans and went to Oxford, and there, later, taught. The modernists at Oxford brought about the dismissal of the Chancellor, John Lutterell, in 1322, and he it was who appealed to the Pope against the teachings of Occam. Pope John XXII summoned Occam to Avignon. He was confined to a convent while his theses were being examined, but his works were not actually condemned at that time. However, while at Avignon he was involved in the quarrel of the Franciscan order with the Pope. There had been a papal undertaking that, in order to preserve the vow of poverty, property left to the Order would be passed on to the Pope who would allow the Order the benefit of the use of it. Pope John said that the Order should accept outright ownership. The Spirituals of the Order,

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with Michael of Cesena at their head, rebelled. William of Occam took the side of the General. With another famous Franciscan, Marsiglio of Padua, they were excommunicated and fled, taking refuge with the emperor Louis of Bavaria who was then involved in a conflict with the papacy too. It is recorded that William said to the Emperor, 'Defend me with your sword and I will defend you with my pen'. Under the Emperor's protection Occam settled in Munich, wrote many famous political and philosophical treatises, and died there in 1349, probably from the Black Death which was then scourging Europe. It is not known how he escaped the papal wrath after the death of the Emperor in 1358. By his party in the Franciscan Order, Occam was recognized as General of the Order from 1342. A commission of hostile doctors condemned his doctrines in 1328 after his support of the Spirituals.

In his philosophical work Occam pursued unsparingly the dominant problem of the scholastic age—the relationship of reason to faith.¹ He conducted his enquiries in *Commentary on the Sentences*, the *Summa Totius Logicae* and elsewhere, examining so assiduously definitions and meanings that he is revealed as essentially a logical analyst akin to Bertrand Russell in our own day. The core of his argument, that the perception of singular things is the source of all judgments about reality, is perhaps the true starting point of the empiricism which was to become the dominant note of English philosophy. The universal is of value only as a kind of mental label. The forms of the mind are not the subject of understanding, but the means by which things are understood. The form, or the universal is never the thing itself, only the sign of many things. He makes an important distinction between *scientia realis* and *scientia rationalis* (logic). Logic is the rational science. The real science is about things, about real experiences, and the things as they exist are quite separate from our mental symbols of them. Logic on the other hand is, as it were, the science of the mental symbols themselves. It is the analysis of the discursive processes in themselves, it formulates the laws by which they may be made self-consistent. Logic belongs to the world of human reason, and cannot exist apart from it, and it is here and here only that we can look for universals.

¹ Cf. *Phases of Thought in England*, p. 155 *et seq.* and E. A. Moody, *The Logic of William of Occam*, London, 1935.

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When we use language we must be careful to distinguish when we are indicating a thing by the use of a word, or when we are using it as a term involving meaning in obedience to *scientia rationalis*. Of an object we may ask what it is, but of a concept what it means. And many of the apparently insoluble problems of philosophy have arisen from a failure to distinguish between the terms which relate to *things* and the terms which belong only to logic. It is as part of this analysis that Occam gave birth to the famous dictum which has become known as Occam's razor—'entities should not be multiplied unnecessarily'—*essentia non sunt multiplicanda praeter necessitatem*. This rule of economy, essentially aesthetic in principle, has been elevated into a law in European science and logic.

Scotus is refuted in this fashion:

'Although it is clear to many that the universal is not any substance existing outside the mind in individual things, and really distinct from them; nevertheless, it appears to some that the universal is in some way outside the mind and in individual things, not, however, really distinct from them, but only formally so. Whence they say that in Socrates is human nature, which is contracted to Socrates through an individuating differentia which is not distinguished really from that (human) nature, but formally, so that there are not two things, though one is not formally the other. But this opinion seems to be unreasonable: because in created things there cannot be any distinction of any sort outside the mind, except where there are distinct things. That it is necessary that there be such things really distinct, I prove thus by syllogism: "This nature is not formally distinct from this nature; this individuating differentia is distinct formally from this nature; therefore, this individuating differentia is not this nature".'¹

On the side of theology Occam rejected the Aristotelian principle that we can come at the notion of God as First Cause or Prime Mover just because all observable motion appears to involve a first mover, itself unmoving. He argued that self-induced motion occurred in the mind, for instance. He doubted, too, whether infinite recession was unreasonable. The image we make of God in our minds is formed not by direct experience of Him but of a union of many physical, moral and personal notions we find in the natural

¹ 'Summa Totius Logicae', from *The Logic of William of Ockham*, E. A. Moody, p. 91.

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order or in mankind. Such concepts do not infallibly establish the existence of God, merely the possibility. In the same analytical spirit he treats of the unity of God. How do we know of his infinity and eternity? They cannot be demonstrated. Reason is not affronted if we suppose that there are many worlds and many Gods. One is reminded indeed of the question asked by the intelligent child when told of the possibility of life on other planets, 'And did Christ die on each of them?'¹

William of Occam makes (in *Quodlibeta Septem* for instance) a powerful analysis of the difference between knowing God in fact and in faith. The seeker after truth, he says, cannot come to any absolute knowledge of God through his knowledge of natural things, for the reason that if God were plainly exposed in natural things, not inferred through them, no one would be able to deny the existence of God, for it would be evident to every unbeliever 'that God is by the fact that he sees that whiteness is'. But it is obvious that it would be a contradiction of terms to say that the unbeliever knows by the evidence of natural things that God is: if he did he would not be an unbeliever. Therefore it is manifest that we know God in faith and not out of natural evidences.

Occam's critical analyses have a familiar ring: they seem to echo the spirit of agnosticism of our age. Yet his agnosticism is directed not at Christianity at all, but at the inadequacies of human reason, and in particular at the absurdity of uniting Aristotelian metaphysics with the Christian revelation. What he taught was the contingent nature of the universe, its dependence upon the creative idea in the mind of God, and God's freedom to make or destroy, and therefore he preached the autonomy of the science (theology) which dealt with the word of God. Theological truths were not to be reached by the path of science or reason.

In his political writings Occam served the Emperor well, for he preached the separation of Church and State and even more, the independence of princes, and the *dependence* of the Church. His views, maintained with a Lutheran stoutness, can be gleaned from his famous *Dialogus inter Militem et Clericum* as done into English in the fourteenth century by one of the fathers of our language, John Trevisa, Vicar of Berkeley.

¹ *Studies in John the Scot.*

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In the *Dialogus* the cleric and the knight meet and immediately the cleric complains of the overturning of the laws. He is interrupted by the knight who meekly affirms himself to be a 'lewde man' without 'profounde lerninge' and asks for a plainer fashion of speaking. The cleric then expounds the right of the Pope as God's vicar to subjugate the temporal realm to his decrees. But the knight turns out to have the superior learning after all, which is hardly surprising since he is the voice of Occam, and with blow after blow reduces his opponent to such silence that in the end he stutters it is past his bedtime and he will begin refutation on the morrow. And never does.

Says the knight: 'And if yet ye striue, that the pope is aboue all other also in temporaltie, ye falle into well great skornes. For if the pope (when he is made pope) shuld be made lord ouer all: than by the same skylle a byshoppe (when he is made byshop) is made lorde of all the countrey of his bysshoptrike, and my priest shall be lord ouer my castelle, and be my lorde. For as the power of the pope is in all, so is the power of these in that party where they rule. . . .'

And he goes on to show that the church is spared from ruin only by the power of princes:

'Therefor the kynges strength is to you in stede of a stronge walle. And ye wotte very welle, that the kynges peace is youre peace; and the kynges saufegarde is your saufegarde. For if the kynges power wanted, or else were withdrawn from you: than (as your synnes asketh) they that commune with you now, and they that wayte upon you nowe, wold dystroy, waste, and consume your goodes, and compell you to be theyr thralles.'¹

We can understand why Luther preferred Occam over all other scholastics.

The effort of scholasticism to be both philosophy and theology broke down when William of Occam destroyed the fragile unity established by Thomas Aquinas. Thereafter there was only decline, philosophically speaking. The 'gret clerkes' became suspect in the Church: their analyses a hindrance to faith. There was a turning from philosophical speculation to Christian mysticism under the influence of the pseudo-Dionysius and perhaps of Erigena too.

¹ *Trevista's Dialogus*. Ed. by A. J. Perry. Early English Text Society, Vol. 167, Oxford, 1925, pp. 18, 25.

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Significant of the leap at realities not to be had by argument was that fourteenth century mystical work by an unknown author, *Cloud of Unknowing*, in which it is declared that God cannot be reached by thought. 'And therefore I would leave all that thing that I can think, and choose to my love that thing that I cannot think. For why; He may well be loved, but not thought. By love may He be gotten and holden; but by thought never.'¹ The author argues that all reasonable creatures, men and angels, have within them two principal powers, one of which he calls 'a knowledgeable power' and the other 'a loving power'. And he affirms, in a manner strikingly akin to A. N. Whitehead, that the knowledgeable power cannot have knowledge of its Maker, who is the ground for its existence rather than its explanation, but that to love, God 'is all comprehensible to the full'.

Abstract reasoning was obviously a barrier to the direct intuitive experience of God sought by the mystics. But mysticism was also an escape from the intellectual aridity which overcame scholasticism. Another route of escape, significantly enough, was the rise of that direct interest in natural phenomena which Roger Bacon's experiments and Occam's nominalism foreshadowed, though centuries were to pass before this asserted itself in a confident new movement alive with all the vitality released by the Renaissance.

We jump the centuries, therefore, to William Gilbert of Cambridge who became president of the Royal College of Physicians in 1600. He published the first great work on physical science *De Magnete* in the same year. He, the founder of the theory of magnetism, the inventor of the word electricity (vis electrica), was the scientist Francis Bacon would like to have been, though Bacon makes only disparaging remarks about him. But to stride from the fourteenth century to the opening of the seventeenth century is to move out of one intellectual climate into another, out of an old world into a new. The sea routes to the East had been opened, the American continents discovered, the world circumnavigated. Riches of learning were flooding the world, as well as a new abundance of goods. Gunpowder was in general use. Printing had flowered into a brilliant new art. Luther split the Church with the nails by which he hammered his theses to the door

¹ Op. cit. Ed. by Evelyn Underhill, London, 1946, p. 60.

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of Wittenberg church. A new kind of monarch had arrived who could thumb his nose at Rome. The sweet humanism of Thomas More had been breathed abroad, though that saintly man had gone to the block for the integrity of his soul. A new, more hungry, more intellectually avid world had come into existence. It was also an increasingly secular one. And with Francis Bacon, Viscount St. Albans, we witness the entry of the amateur into philosophy. The old philosophers had been servants of the Church. The new men were of the world. René Descartes, who decided to reject everything his reason could not prove to him as self-evidently existing, was a soldier: Francis Bacon, who called for a clean sweep of the old systems of speculation, was lawyer, social climber, elegant statesman: Thomas Hobbes, who made a new and brutal analysis of the springs of human conduct, was tutor, secretary, and self-taught thinker: John Locke was physician and tutor. Francis Bacon spoke for them all when he said, with classic audacity, 'I have taken all knowledge to be my province'.

CHAPTER TWO

The Coast of the New Intellectual World

FRANCIS BACON, VISCOUNT ST. ALBANS (1561-1626)
THOMAS HOBBES (1588-1679)

Francis Bacon, who by writing *Advancement of Learning* in English founded philosophy in the English language, was the son of a brilliant father, Sir Nicholas Bacon, a quiet, efficient servant of the State, for twenty years Lord Keeper of the Great Seal to Queen Elizabeth. Bacon's mother was Lady Anne Cooke, daughter of the tutor of Edward VI, sister-in-law of Elizabeth's Lord Treasurer, Burghley. Lady Anne was something of a blue-stocking—a scholar and theologian who tutored her son herself. His precocity as a boy amused Queen Elizabeth. 'My little Lord Keeper,' she said of him teasingly. Francis therefore began life with excellent connections among the great families of the land, and with an impressive heritage of brains. He had reason to expect the protection of the Queen, the favour of the Cecils, and a career at Court. Though his career was not to take this expected route, he lived all his life among the great and outshone them.

At twelve he was sent to Trinity College, Cambridge, from which he returned, according to Rawley, his first biographer, despising Aristotle; at sixteen he took a post on the staff of the English ambassador to France; at eighteen his father died suddenly and he was without estate or means and forced to sue abjectly for the favours of those upon whom he had a right to count. But the Cecils seem clearly to have disliked him, and to have done nothing to advance him, rather on the contrary everything to block his progress. And Queen Elizabeth, though aware of the brilliance and promise of her

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'little Lord Keeper', did nothing herself to summon him to Court. His early struggles were such that he was at one time thrown into a spunging-house for a debt of £300 he could not pay.

Nevertheless he was not the kind of man to be held down. He was a barrister at twenty-one, a Member of Parliament at twenty-four. Queen Elizabeth had no high opinion of his legal ability: 'Bacon hath a great wit and much learning; but in law showeth to the uttermost his knowledge, and is not deep.' But Ben Jonson, a better judge, said of him on the other hand: 'There happened in my time one noble speaker who was full of gravity in his speaking. His language, where he could spare or pass by a jest, was nobly censorious. No man ever spoke more neatly, more pressly, more weightily, or suffered less emptiness, less idleness, in what he uttered. No member of his speech but consisted of his own graces. His hearers could not cough or look aside from him without loss. He commanded where he spoke, and had his judges angry and pleased at his devotion. No man had their affections more in his power. The fear of every man that heard him was lest he should make an end.'

Though Burghley constantly failed Bacon, the handsome Earl of Essex made himself his friend and pleaded his cause at Court, and when he failed to secure the Attorney-Generalship for him presented him with an estate at Twickenham as a compensation. Yet Francis Bacon was to serve Essex ill, for when Essex conspired against Elizabeth, Bacon was not on his side, and, indeed, became Crown Counsel for the prosecution at the trial which ended in his friend and benefactor's execution. And it is here we meet the enigma of Bacon's moral character. Of course, he was under no obligation to aid his friend in treasonable courses, but need he have served the Queen against him? Or if he had to do so, was it necessary to seek to retain his newly won position at Court by such a merciless prosecution of one whose conviction was in any case certain? And was he compelled when his friend was in his grave to write for the Queen, 'A Declaration of the Practices and Treasons attempted and committed by Robert, Earl of Essex', that Essex might be publicly defamed all over again? Never once did he appear in this tragedy as one who might intercede, even in private, for his friend, but only as a calculating careerist.

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His advancement continued into the reign of James I. He was made Lord Chancellor in his fifties, published his most important work, *Novum Organum*, in his sixtieth year and was created Viscount St. Albans at the same time. What more could destiny bring to such a man except the nemesis which lies in wait for pride? At the height of his power Bacon was accused of taking bribes and tried by a Parliamentary commission. He could offer no defence. He had been waxing fat on 'gifts'. Macaulay, in his bitter attack on him, said that he had been a servile advocate in order to be a corrupt judge. Bacon was forced to the most abject confession of guilt: 'Upon advised consideration of the charges, descending into my own conscience, and calling my memory to account so far as I am able, I do plainly and ingenuously confess that I am guilty of corruption and do renounce all defence.' He was dismissed from public life, but suffered no other great indignity. Politics' loss was to be philosophy's gain, for he spent the last years of his life in retirement, writing some of his greatest works. His learning and wisdom redeem the man to us as they redeemed him to his contemporaries; indeed so much was he admired in his lifetime, and so much has he been praised since, that many efforts have been made to saddle him with the authorship of Shakespeare's plays.

His death was a strangely fitting one for a man who, like his namesake Roger, had taught the necessity for the verification of facts by experiment. This is how it is described in Aubrey's *Brief Lives*:

'Mr. Hobbs told me that the cause of his lordship's death was trying an experiment: viz. as he was taking the aire in a coach with Dr. Witherborne (a Scotchman, Physitian to the King) towards High-gate, snow lay on the ground, and it came into my lord's thoughts, why flesh might not be preserved in snow, as in salt. They were resolved they would try the experiment presently. They alighted out of the coach, and went into a poore woman's house at the bottom of High Gate Hill, and bought a hen, and made the woman exenterate it, and then stuffed the bodie with snow, and my lord did help to doe it himself. The snow so chilled him, that he immediately fell so extremely ill, that he could not returne to his lodgings (I suppose then at Graye's Inn), but went to the earle of Arundell's house at High-gate, where they putt him into a good bed

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warmed with a panne, but it was a damp bed that had not been layn-in about a year before, which gave him such a cold that in two or three dayes, as I remember he told me, he dyed of suffocation.¹

This man, of the eager, inquiring mind, and delicate, lively hazel eye, 'like the eye of a viper', whom Pope called 'the wisest, brightest, meanest of mankind' wrote an outstandingly beautiful account of his own call to philosophy, which came when he was only sixteen.

'I found that I was fitted for nothing so well as for the study of truth; as having a mind nimble and versatile enough to catch the resemblance of things (which is the chief point), and at the same time steady enough to fix and distinguish their subtler differences; as being gifted by nature with desire to seek, patience to doubt, fondness to meditate, slowness to assert, readiness to consider, carefulness to dispose and set in order; and as being a man that neither affects what is new nor admits what is old, and that hates every kind of imposture. So I thought my nature had a kind of familiarity with Truth.'²

Francis Bacon did not create a new school of philosophy. He himself said he did not labour to lay the foundation of any sect or doctrine. But he did propose, and embark upon, a vast work of criticism and synthesis—the *Instauratio Magna*, the great reconstruction of philosophy. This is how he described the 'Distribution of the Work':

'1. Survey and Extension of the Sciences; or, The Advancement of Learning.

'2. *Novum Organum*; or, Precepts for the Interpretation of Nature.

'3. Phenomena of the Universe; or, Natural and Experimental History, on which to found Philosophy.

'4. Ladder of the Understanding.

'5. Precursors, or Anticipators, of the Second Philosophy.

'6. Second Philosophy; or Active Science.'³

The Advancement of Learning was published in 1605, *Novum*

¹ *Brief Lives and other Selected Writings*, J. Aubrey. Ed. A. Powell, London, 1949, pp. 192-3.

² 'De Interpretatione Naturae Prooemium' in *Works of Francis Bacon*. Ed. J. Spedding and R. L. Ellis, London, 1887, Vol. 3, p. 518.

³ *The Physical and Metaphysical Works of Lord Bacon*. Ed. J. Devey, London, 1858, p. 10.

Organum in 1620. An enlarged edition of the *Advancement*, translated into Latin, was published in 1623 under the title of *De Dignitate et Augmentis Scientiarum* and the 'Natural and Experimental History' well launched by the same year. Bacon's greatest works belong to this Herculean and uncompleted task. Not the least part of its significance is that it inspired the French *Encyclopédie*. What it really contributed to European philosophy, as the Encyclopaedists saw, was a method of investigating nature and arriving at truth. Knowledge, Bacon said, was not an opinion to be held, but a work to be done, and in this enunciation of the necessity for patient research is to be found, quite certainly, the voice of modern science.

Before man can humbly approach the truth he must clear himself of the fallacies which cloud his apprehension. These Bacon poetically described as *Idols*. These 'false notions which have already pre-occupied the human understanding, and are deeply rooted in it, not only so beset men's minds that they become difficult of access, but even when access is obtained will again meet and trouble us in the instauration of the sciences, unless mankind when forewarned guard themselves with all possible care against them'.¹

He describes four species—Idols of the Tribe, Idols of the Den, Idols of the Market, and Idols of the Theatre. It is as important, he argues, to expose these idols where science is concerned, as to confute sophisms in common logic. Idols of the Tribe are fallacies common to the whole of human nature while those of the Den are the errors of the individual. Each man has his individual den or cavern, the hiding-place of his thoughts, which intercepts and corrupts the light of nature according to the peculiarities of its construction. It is, if you like, a man's idiosyncratic way of looking at things, or the sum of his prejudices and admirations.

'Let us consider again the false appearance imposed upon us by every man's own individual nature and custom, in that feigned supposition that Plato maketh of the cave: for certainly if a child were continued in a grot or cave under the earth until maturity of age, and came suddenly abroad, he would have strange and absurd imaginations. So in like manner, although our persons live in the view of heaven, yet our spirits are included in caves of our own

¹ *Novum Organum*, Bk. I, par. xxxviii. (Works, J. Devey, p. 389.)

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complexion and customs, which minister unto us infinite errors and
vain opinions, if they be not recalled to examination.¹

Idols of the Market Place are fallacies born out of popular ways
of thinking and of using language. They come about through in-
difference to truth or careless commerce of words and thoughts.
'There arises from a bad and inapt formation of words a wonderful
obstruction to the mind.' That is a view which George Bernard
Shaw and Bertrand Russell in our own day have endorsed—the one
out of dislike for the lack of logic in our spelling and the other out
of distrust of the subject-predicate form of language. And as to the
Idols of the Theatre, Bacon describes them as the fallacies 'which
have crept into men's minds from the various dogmas of peculiar
systems of philosophy, and also from the perverted rules of demon-
stration, and these we denominate idols of the theatre: for we regard
all the systems of philosophy hitherto received or imagined, as so
many plays brought out and performed, creating fictitious and
theatrical worlds.'²

And so he accuses Aristotle of corrupting philosophy by logic,
and the empiric school of producing dogmas of a more deformed
and monstrous nature than the sophists. Platonism is condemned
for the introduction of scepticism. Gilbert's scientific philosophy
is corrupt—he is accused of wasting his time on trivialities like the
magnet. Bacon's opposition to the hard-dying scholasticism of the
universities goes deep: he shared the hatreds of the Reformation:
'Accedebat odium et contemptus, illis ipsis temporibus ortus erga
Scholasticos,' he wrote in *De Augmentis*. And also: 'Scholasticorum
doctrina respectu prorsus haberi coepit tanquam aspera et barbara.'

He warns his readers in *The Advancement of Learning*, that 'from
the contemplation of nature, and the principles of human reason, to
dispute or urge anything with vehemence, as to the mysteries of
faith, or over-curiously to examine and sift them, by prying into the
manner of the mystery, is no safe thing: "Give unto faith the things
that are faith's" . . . it is a vain attempt to draw down the sublime
mysteries of religion to our reason, but we should rather raise our
minds to the adorable throne of heavenly truth.'³ All of which is an

¹ *The Advancement of Learning* (World's Classics Edn., p. 143).

² *Novum Organum*, Bk. I, par. xliv (*Works*, J. Devey, p. 391).

³ *Advancement of Learning*, Bk. III, Chap. II (*Works*, J. Devey, p. 121).

evasion of the real problem, of course, but it was a pronouncement Bacon was compelled to make out of his belief that a mixture of philosophy (or science) and religion produces an heretical religion and a superstitious philosophy and his fear that spiritual quests might 'interfere most mischievously in the discovery of causes'.

The renunciation of natural theology and religious speculation cleared the field for his real task, developed so admirably in the greatest of his works, *Novum Organum*. *Novum Organum* advocates a new method for the interpretation of nature, the *inductive* one first proposed by his namesake Roger. Francis contrasts *induction* with the *deductive* method of the schoolmen in this explanation of the plan of 'The Great Instauration', and naturally to the disadvantage of the latter:

'For in common logic, almost our whole labour is spent upon the syllogism. Logicians hitherto appear scarcely to have noticed induction, passing it over with some slight comment. But we reject the syllogistic method as being too confused, and allowing nature to escape out of our hands. For though nobody can doubt that those things which agree with the middle term agree with each other, nevertheless, there is this source of error, that a syllogism consists of propositions, propositions of words, and words are but the token and signs of things. Now, if the first notions, which are, as it were, the soul of words, and the basis of every philosophical fabric, are hastily abstracted from things, and vague and not clearly defined and limited, the whole structure falls to the ground. We therefore reject the syllogism, and that not only as regards first principles, to which logicians do not apply them, but also with respect to intermediate propositions, which the syllogism contrives to manage in such a way as to render barren in effect, unfit for practice, and clearly unsuited to the active branch of the sciences. Nevertheless, we would leave to the syllogism, and such celebrated and applauded demonstrations, their jurisdiction over popular and speculative acts, while in everything relating to the nature of things, we make use of induction for both our major and minor propositions; for we consider induction as that form of demonstration which closes in upon nature and presses on, and, as it were, mixes itself with action.'¹

The senses are faulty guides (hence Bacon's opposition to em-

¹ *Distribution of the Work (Works, J. Devey, p. 12).*

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piricism). They either fail us or deceive us. He suspects all untested notions and therefore declares himself in favour of properly controlled experiments. The conclusions of the new philosophy must be drawn from a new natural history in which theory follows the careful ascertainment of fact, not vice versa. The inductive method begins for him with the collection of all the known facts or instances of any problem or field to be considered, without *a priori* judgment. The laws concerning the problem must be derived from the rigorous analysis and classification of the facts, including an examination of contradictory ones. In *Novum Organum* he illustrates how his method relates to the investigation of heat. He gives twenty-seven instances of forms of heat which include such diverse examples as the rays of the sun, shaggy substances such as wool, the spontaneous combustion of hay, quicklime, dung and even the burning produced by severe and intense cold. After he has examined all these forms of heat he draws up a list of the forms which are self-evidently contradictory. He arrives at a 'first vintage' definition of heat—'the nature whose limit is heat appears to be motion'. Developed, it becomes this, 'heat is an expansive motion, by which the body strives to dilate itself, and to occupy a greater space than before. This difference is principally seen in flame, where the smoke or thick vapour is clearly dilated and bursts into flame.' Overlooking the law of expansion of water into ice he argues that the expansive motion of heat is inversely shown in the universal contracting motion of cold.

Of the codifying and testing of facts he wrote this: 'In forming axioms, we must invent a different form of induction from that hitherto in use; not only for the proof and discovery of principles (as they are called), but also of minor, intermediate, and, in short, every kind of axioms. The induction which proceeds by simple enumeration is puerile, leads to uncertain conclusions, and is exposed to danger from one contradictory instance, deciding generally from too small a number of facts, and those only the most obvious. But a really useful induction for the discovery and demonstration of the arts and sciences, should separate nature by proper rejections and exclusions, and then conclude for the affirmative, after collecting a sufficient number of negatives.'¹

¹ *Novum Organum*, Bk. I, par. xv (*Works*, J. Devey, p. 432).

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The new method was never completely formulated. There is nothing to be gained by retracing all the steps by which he over-elaborated in his scholarly and sometimes flowery way the process of induction as he conceived it to be, for science has never regarded induction as the only path to scientific discovery, and Bacon too rejects it in so far as it is simple enumeration. One might argue the opposite, that new laws have seldom been revealed by this tedious method but have been the result of daring hypotheses, or ingenious abstractions like those of Galileo and Newton, based on a few facts alone, and afterwards tested empirically. Perhaps in our own day only has Francis Bacon's inductive method come into its own, for there are modern research laboratories where the search for a new anti-biotic, for example, proceeds by exhaustive analysis and enumeration together with the testing of contrary instances. In more than one sense Francis Bacon was before his time. By his own important premisses—that observation and experiment must precede the formulation of theory—there could hardly be a valid theory of scientific research in the absence of the research itself. Yet the antiquated air which surrounds his theory must not blind us to the revolutionary nature of his approach. True child of the Renaissance, he saw that knowledge was power. It was the truth which led to power, rather than the truth which led to God, which attracted him, and which he deemed of the first importance. 'Knowledge and human power are synonymous, since the ignorance of the cause frustrates the effect; for nature is only subdued by submission, and that which in contemplative philosophy corresponds with the cause in practical science becomes the rule.'¹ Man is the minister and interpreter of nature, and the real matter in hand is no mere felicity of speculation, but the business, the power, the fortunes of the human race. Mankind is drowned in ignorance or drugged by false philosophy. It has but to awake to the means already available to it for increasing knowledge and power in order to change the whole estate of man. It is in this spirit that Bacon appends to *The Advancement of Learning* a speculation entitled 'The Coast of the New Intellectual World' or 'a recapitulation of the deficiencies of knowledge, pointed out in the preceding work, to be supplied by posterity'. This lists fifty-eight necessary fields of study from a

¹ *Novum Organum*, Bk. I, par. iii (Works, J. Devey, p. 383).

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history of monsters to 'the doctrines of the affections, passions, or perturbations of the mind' (or, if you will, abnormal psychology). It is in the same spirit that he wrote the (incomplete) fable *New Atlantis*, wherein he cast into imaginative form the things which a scientific age might do. In *New Atlantis* are to be found caves 'for coagulations, indurations, refrigerations, and conservations of bodies' likewise for 'the producing also of new artificial metals'. There are to be seen in this strange land, houses for the production of meteors and lightnings, high towers for astronomic purposes, chambers for the cure of diseases, and orchards and gardens for the horticultural experiments Luther Burbank has made in our own century. Bacon describes medical dispensaries and laboratories, new mechanical arts for the production of consumer goods, furnaces for metals, and, almost exactly in the manner of Roger Bacon (whose soul must surely have been re-incarnated in him), 'means of seeing objects afar off, as in the heavens and remote places', or to make large things small and small things large.

'We have also engine-houses, where are prepared engines and instruments for all sorts of motions. There we imitate and practise to make swifter motions than any you have, either out of your muskets or any engine that you have; and to make them and multiply them more easily and with small force, by wheels and other means, and to make them stronger and more violent than yours are, exceeding your greatest cannons and basilisks. We represent also ordnance and instruments of war and engines of all kinds; and likewise new mixtures and compositions of gunpowder, wild-fires burning in water and unquenchable, also fire-works of all variety, both for pleasure and use. We imitate also the flights of birds: we have some degrees of flying in the air. We have ships and boats for going under water and brooking of seas, also swimming girdles and supporters. We have divers curious clocks, and other like motions of return, and some perpetual motions.'¹

In short, *New Atlantis* was very much the shape of things to come.

Bacon was, in scholastic terms, a nominalist. What else could he be? 'Nothing exists in nature except individual bodies, exhibiting clear individual effects, according to particular laws.' He did not

¹ *New Atlantis* (World's Classics Edn., p. 272).

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regard his nominalism as opposed to Christian thought, any more than Occam did. In fact his nominalism was divorced completely from any theological consequences it might have had by the decision that science and theology were two separate and incompatible spheres, the laws and conclusions of one being invalid for the other. This marks the beginning of the secularization of scientific thought. However, Bacon's nominalism is something more, it is *materialism*, even the atomic materialism of Democritus, of which Thomas Hobbes was to become the spokesman.

The 'Mr. Hobbs' who told John Aubrey the story of the death of Francis Bacon was no less a person than Thomas Hobbes of Malmesbury. Thomas was 'beloved of his lordship' who 'was wont to have him walke with him in his delicate groves where he did meditate: and when a notion darted into his mind, Mr. Hobbs was presently to write it downe, and his lordship was wont to say that he did it better than any one els.' If it was as a peripatetic that Hobbes received his first training, it was in peripatetic manner that he wrote *Leviathan*, for Aubrey also records: 'He had read much, if one considers his long life, but his contemplation was much more than his reading. He was wont to say, that if he had read as much as other men, he should have knowne no more than other men. . . . The manner of writing was thus. He walked much and contemplated, and he had in the head of his cane a pen and ink-horn, carried always a note-booke in his pocket, and as soon as a thought darted, he presently entered it into his booke, or otherwise might have lost it.'¹

Thomas Hobbes was born at Westport in Wiltshire in April, 1588. His father, the vicar of the parish, was remarkable only for his stupidity and quarrelsomeness. Although fear of the approach of the Spanish Armada is said to have led to the premature birth of Thomas (he said of his mother that under the influence of that terror she brought forth twins, 'myself and fear') all the evidence goes to show that he led a sheltered boyhood, supported not by his indigent parent but by an uncle. At fifteen he went to Magdalen Hall, Oxford. When he left the university he became companion and tutor to the eldest son of Lord Cavendish, and maintained connection with the family till his death. His life thereafter was as tutor,

¹ *Brief Lives and other Selected Writings*. Ed. A. Powell, pp. 189, 243-2, 251.

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or scholar employed in a country house, with leisure to travel and opportunity to talk to the great. It was through such connections with the country houses of the great, the new cultural centres of English life, that the son of the parish priest met Francis Bacon, Ben Jonson, and Lord Herbert of Cherbury (whose *De Veritate*, published in 1624, was an important analysis of the confusion of the age). He made the grand tour of Europe. At the time of the Long Parliament when the imprisonment of Laud and Strafford foreshadowed the revolutionary turmoil to come, he took refuge in France. Altogether he spent eleven years abroad. He was soon associated in France with a group of brilliant mathematicians and scientists of which Mersenne, the admirer of Galileo, was the chief, and through them was invited to make his comments on Descartes' *Meditationes de prima philosophia*. They were forwarded to Descartes in Holland and printed among the *Objectiones*, with Descartes' reply, when the treatise was published in 1641. Hobbes was made tutor to Prince Charles of Wales in 1646. But a position even in a court in exile was ultimately impossible to him, for his political and philosophical views pleased no one, least of all the clerics. Indeed, in the end he was forced to make his peace with Cromwell and to return to England for greater safety. His friendship with the Stuarts was, nevertheless, valuable to him after the Restoration.

Hobbes was in his fifties when he fled to Paris. His philosophical interests were a product of his mature years. Aubrey records: 'He was forty years old before he looked on geometry; which happened accidentally. Being in a gentleman's library, Euclid's *Elements* lay open, and 'twas the 47 *Element libri I.* He read the proposition. "By G—", sayd he (he would now and then sweare by way of emphasis), "this is impossible!" So he reads the demonstration of it, which referred him back to such a proposition; which proposition he read. That referred him back to another, which he also read. *Et sic deinceps*, that at last he was demonstratively convinced of the truth. This made him in love with geometry.'¹

His philosophical system was developed in four principal works, *De Corpore Politico* (1650), *De Homine* (1658), *De Cive*, appropriately in 1642, the year the English civil war began, and his masterpiece, *Leviathan*, in 1651, two years after the execution of Charles I. It is

¹ *Ibid.*, p. 242.

with *Leviathan*, 'the greatest, perhaps the sole, masterpiece of political philosophy written in the English language,' according to Professor Michael Oakeshott,¹ that we shall be concerned, for what is most important in his other works is repeated in *Leviathan*. Few political philosophies have had such a stimulating effect on European history: perhaps only Machiavelli's *The Prince* and Marx and Engels' *Communist Manifesto* can claim equal influence. Like Bacon, Hobbes wrote in a period of scientific blossoming. In his day the Royal Society for Improving Natural Knowledge was founded, Harvey discovered the circulation of the blood, and Galileo, whom Hobbes met in Florence and to whom he was indebted for his theory of motion, was plotting the course of the planets in the heavens with telescopes of his own manufacture and espousing a Copernican astronomy which brought him into conflict with the Church. Men of intelligence were drawn everywhere to the young physical sciences: they made little difference in their minds between science as we understand it—that is a pursuit of knowledge as such—and philosophy, that is to say the conclusions which might be drawn from it. Yet it was a century of political and social distress. The promise of science was glorious, but the affairs of men were full of ruin and despair. It was as one fleeing from political oppression and full of 'grief for the calamities of my country' that Hobbes took the field as a philosopher, anxious to find an explanation of the social misbehaviour of men.

Hobbes, like Francis Bacon, was a nominalist. He regarded scholasticism as a collection of absurdities, and felt so certain of his own originality that he claimed that there was no civil philosophy before the publication of his *De Cive*. Plato's *Republic*, Aristotle's *Politics*, Machiavelli's *Prince*, Dante's *Monarchia* and indeed the political speculation of centuries were dismissed out of hand: the same dismissal of the past as having little worth contributing is to be found in Bacon too. Hobbes' nominalism is clearly expressed: 'Of names, some are *proper*, and singular to one thing only, as *Peter*,

¹ Introduction to *Leviathan*, Oxford (undated), Blackwell. This brilliant essay contends that the importance of Hobbes' philosophy 'lies in his conception of the nature of philosophical knowledge, and not in any doctrine about the world'—i.e. it contends for Hobbes' rationalism as against the materialism generally attributed to him and it is one of the most important contemporary analyses of his thought. Nevertheless *Leviathan* is a doctrine about the world, and this is of more importance than its epistemology. The page references which follow are to this edition.

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*John, this man, this tree; and some are common to many things, man, horse, tree; every of which, though but one name, is nevertheless the name of divers particular things; in respect of all which together, it is called an universal; there being nothing universal but names; for the things named are every one of them individual and singular.*¹

Like the analytical nominalists such as Occam, Hobbes makes a very sharp distinction between the realm of reason and that of revelation. God, he explains, declares his laws in three ways 'by dictates of natural reason, by revelation, and by the voice of some man, to whom by the operation of miracles, he procureth credit with the rest.' The word of God is, then, heard by man either through right reason, the sense supernatural, or faith, or all three. But he is at pains to point out that man cannot be sure of revelation or of faith. 'Miracles are marvellous works: but that which is marvellous to one, may not be so to another. Sanctity may be feigned; and the visible felicities of this world, are most often the work of God by natural, and ordinary causes. And therefore no man can infallibly know by natural reason, that another has had a supernatural revelation of God's will; but only a belief; every one, as the signs thereof shall appear greater or lesser, a firmer or weaker belief.'² Exempting Christianity—more by courtesy or caution than conviction—he decides that religion is anthropomorphic. It is itself largely a projection of man's fears. It is an artifact. Nevertheless it is by reason and religion that man is distinguished from the brutes. However, as Hobbes' approach to religion is essentially sceptical it is finally to reason he is compelled to appeal. And he makes clear that the reasoning of which he is thinking is something more than the disputationes of the schoolmen: for him philosophy is the discovery of causes, the *science* of causes. It is therefore less a process of unveiling ultimates or absolutes than of grappling in a utilitarian way with the reality immediately around man. Here is his limiting definition:

'By philosophy is understood the knowledge acquired by reasoning, from the manner of the generation of any thing, to the properties: or from the properties, to some possible way of generation

¹ *Leviathan*, Pt. I, Chap. 4 (p. 19).

² *Ibid.*, Pt. 2, Chap. 26, Sec. 7 (p. 187).

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of the same; to the end to be able to produce, as far as matter, and human force permit, such effects, as human life requireth.¹

In fact, the important part of philosophy for him was what we should now call science. Reasoning is its instrument. But reasoning is an arithmetic of names. It is a kind of reckoning as when logicians add together 'two names to make an *affirmation*, and two *affirmations* to make a *syllogism*; and *many syllogisms* to make a *demonstration*; and from the *sum*, or *conclusions* of a *syllogism*, they subtract one *proposition* to find the other.'² But it is possible, as in arithmetic, to err. Not all science (philosophy) is infallible. Hobbes' scepticism extends, therefore, to human reason.

Hobbes begins his examination of the human animal where most of the empiricists after him were to start, that is, that there are no conceptions in a man's mind which do not have their origins 'in that which we call SENSE'. Memory is of sense-impressions: imagination is *decaying* sense. All the complicated processes of human thought are built up out of multitudes of sense impressions. What distinguishes man from the beasts is the ability to give things names. It enables man to transfer his train of thought, or of mental associations, into a verbal train, and so to communicate experiences one to another, and to reason (or reckon by names) about them.

Yet man is not wholly explained by his reasoning power. He is an animal. All animals share two kinds of activity—one which is called *vital*, and the other *voluntary*. That is to say, living beings not only live, but *will*. What they will to do is a product of their imaginations. Hobbes calls the voluntary motion, 'endeavour'. Endeavour originates in the vital passions. Endeavour towards something is appetite, and away from something, aversion. Both these actions are types of the *motion* which Hobbes, under the influence of Galileo, thought of as the final reality. Francis Bacon spoke of power as something which man could reach out and grasp by special techniques, once he had learnt them. Hobbes reversed this view: man himself is a consequence of a power process anterior to him and at the root of all phenomena: that process is the attraction and repulsion of particles or bodies. It is as relevant to moral decision as to physical acts.

¹ *Ibid.*, Pt. 4, Chap. 46, par. 1 (p. 435).

² *Ibid.*, Pt. 1, Chap. 5, par. 7 (p. 25).

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'But whatsoever is the object of any man's appetite or desire, that is it which he for his part calleth *good*: and the object of his hate and aversion, *evil*; and of his contempt, *vile* and *inconsiderable*. For these words of good, evil, and contemptible, are ever used with relation to the person that useth them: there being nothing simply and absolutely so; nor any common rule of good and evil to be taken from the objects themselves. . . .'¹

The passions of men cause their actions: their actions result in collisions between them. In a state of nature men are roughly equal in passions and in strength. Each man has a natural right to seek his own preservation and this right is both demonstrated and guaranteed by the rough equality between men. But the struggle for self-preservation in a natural state in which all men are free and equal can result only in constant war uninhibited by moral codes. 'To this war of every man, against every man, this also is consequent; that nothing can be unjust. The notions of right and wrong, justice and injustice, have no place. Where there is no common power, there is no law: where no law, no injustice.'²

In such a frightful condition of interminable war 'there is no place for industry; because the fruit thereof is uncertain: and consequently no culture of the earth; no navigation, nor use of the commodities that may be imported by sea; no commodious building; no instruments of moving, and removing, such things as require much force; no knowledge of the face of the earth; no account of time; no arts; no letters; no society; and which is worst of all; continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short.'³

Because their fear can no more be borne, men reach the point where they surrender certain rights (though not all rights, for some are inalienable) and curb their bestial passions in order to form a society which can protect them forcibly from their mutual rapacity. The common renunciation is described in this way:

'This is more than consent, or concord, it is a real unity of them all, in one and the same person, made by covenant of every man with every man, in such manner, as if every man should say to

¹ Ibid., Pt. 1, Chap. 6 (p. 32).

² Ibid., Pt. 1, Chap. 13 (p. 83).

³ Ibid., Pt. 1, Chap. 13 (p. 82).

every man: *I authorize and give up my right of governing myself, to this man, or this assembly of men, on this condition, that thou give up thy right to him, and authorize all his actions in like manner.* This done, the multitude so united in one person, is called a COMMONWEALTH, in Latin, CIVITAS. This is the generation of that great LEVIATHAN, or rather, to speak more reverently, of that mortal God, to which we owe, under immortal God, our peace and defence.¹

Once formed, the sovereign power cannot be taken away from the sovereign, nor can the sovereign himself alienate it. The act of union is irrevocable. The sovereign *is* sovereign: he is to be judge of what doctrines shall be taught the people, and of the rules to which they shall be made to conform. No citizen may object to this or take action to punish or unseat the sovereign, because he forfeited just such liberties in the contract he made.

It is chastening as well as instructive to recall that Hobbes fits his harsh judgment of man and society into the framework of a Christian commonwealth. *Leviathan*, indeed, consists of four parts—1. Of man, 2. Of Commonwealth, 3. Of a Christian Commonwealth, 4. Of the Kingdom of Darkness. Hobbes declares that the *Christian* commonwealth is the product of supernatural revelation and therefore devotes his third section to a consideration of the prophetical word of God. We must come to God, however, without the renunciation of our senses and experiences, ‘nor that which is the natural word of God, our natural reason’. Such powers are ‘not to be folded up in the napkin of an implicit faith’. There follows from this very Protestant opening what is indeed a long exegesis of the Holy Scriptures, especially of such passages as relate to the powers ecclesiastical and the powers temporal. Part III concludes with a chapter: ‘Of What is Necessary for a Man’s Reception into the Kingdom of Heaven.’ The most frequent cause of sedition and civil war in Christian commonwealths has been, Hobbes explains, the difficulty men conceive of obeying at once both God and man: his age, indeed, bore bitter witness to this truism. But the founder of the terrible doctrine of the civil Leviathan which must in all circumstances be obeyed and against which no resistance is permitted dare not accept the existence of a religious sanction to resist social tyranny, or his whole case is overthrown. Hobbes dismisses the

¹ *Ibid.*, Pt. 2, Chap. 17 (p. 112).

difficulty as 'of no moment'. The real problem is that one must so act in life as not to forfeit the life eternal. It is all a question of what the scriptures require of us; and 'to fulfil the law, and to believe that Jesus is the king, is all that is required to bring a man to eternal life'. Faith in God and civil obedience are both of them necessary to salvation. If, it follows, in obeying one's lawful sovereign one does not forfeit life eternal, 'not to obey is unjust'. 'Our Saviour Christ hath not given us new laws, but counsel to observe those we are subject to; that is to say, the laws of nature, and the laws of our several sovereigns.'¹ Obedience to the sovereign is not even inconsistent should he happen to be an infidel.

It is Part IV, 'The Kingdom of Darkness', which lets the Erastian cat out of the bag. Hobbes goes as far as William of Occam in rejecting the argument that the temporal powers should be subject to the spiritual. He hated particularly the Church of Rome and could not endure that there should be any power over the consciences of men but the Word itself. The Papacy was a power, with the ambitions of a power. 'The Papacy is no other than the ghost of the deceased Roman Empire sitting crowned on the grave thereof.' But it is not only the Roman clergy who seek temporal power under spiritual guise; clerical villains can be discovered elsewhere.

How many streams of English philosophy spring from Hobbes! There is the materialist view of man as compounded of motions in no wise different from those of physical bodies: the utilitarianism of Bentham has its roots in the notion that society itself is a utilitarian artifact and that man is moved only by the pleasure-pain principle. More obviously still, the empirical school of philosophy has its first thesis, of the origin of the contents of the mind in sense-experience, most cogently stated in the opening pages of *Leviathan*.

We may also trace, if we are so inclined, many important developments in political theory to Hobbes. Even though, for him, the sovereign could be either man or an assembly, the authoritarian note is strong. *Leviathan* was a doctrine attractive to autocrats: it supported the divine right of kings upon materialist as well as Christian principles. Yet at the same time the forceful exposition of the social contract lent itself all too easily to the amendment soon to be made—that if sovereignty stems from the people, they may just

¹ *Ibid.*, Pt. 3, Chap. 43 (p. 385).

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as honourably reclaim it as award it. In vigorous metaphor, Hobbes likens the state to an animal. The famous title-page to the first edition pictures a sovereign compounded of human beings as a man is made of cells. The notion of the state as an organism, so beloved by romantic nationalists, received a powerful impetus from this.

In criticism, two points must be made. The political and human doctrines of Hobbes rest on simplifications drawn from natural science for the most part. What is the Hobbesian man? He is an animal who out of his sense-experiences and passions seeks power and satisfaction, but finds only fear. Man is conceived primarily as an organism, and it is simply as a gargantuan organism that his social life is viewed. From this natural-history approach no escape appears possible, at least among empiricists, even to this day. *Somehow* from appetite, emotion, sensation, they must traverse the gulf and come to reason, morality, society, rule of law. The gulf can never properly be crossed without a sense of human history. Of man there is more to be said than that he is a predatory organism, coming incredibly to the conclusion of a social contract for his protection. In fact, if the brutish animal which Hobbes regards as man in his natural state, comes without other preparation than his fear to the creation of society, that seems proof enough that even natural man is not a brutish animal.

That men of science were already, in Hobbes' time, looking for the simpler elements out of which more complex bodies were formed, made it seem most sensible to look also for the primitive, natural elements out of which societies were made. And the free and equal natural man contracting into society is the equivalent in political theory of the atoms of physics compounding into powerfully bonded chemical unions. But in truth no natural, pre-social man is to be discovered anywhere. It is always the historical man we encounter, one who remains forever inexplicable in biological, chemical, or atomic terms.

CHAPTER THREE

The Scientific Revolution

RENÉ DESCARTES (1596-1650)
SIR ISAAC NEWTON (1642-1727)
ROBERT BOYLE (1627-1691)
THE ROYAL SOCIETY

The seventeenth century, that century of religious war, civil war, plague, fire, tumult and regicide witnessed also the great scientific revolution. Gilbert's account of magnetism was published in 1600, Kepler's *Astronomia Nova* in 1609, Bacon's *Novum Organum* in 1620, Harvey's discovery of the circulation of the blood dates from 1624,¹ Galileo's *Dialogo* was published in 1632, Descartes' *Discours de la Méthode* in 1637, Hobbes' *Leviathan* in 1651, Newton's *Principia* in 1687—and these are only some of the more outstanding contributions to the intellectual torrent. Only the nineteenth century rivals it, but not even the nineteenth century broke so decisively with the past.

The nature of this break can only be understood in the light of the Christian dilemma: it has been too little studied.² The sources of Christian faith and inspiration contain no science. There is not to be found in the scriptures even the apprehension of what a scientific view might be. There is even a significant absence of orderly exposition of doctrine in the Old Testament and the synoptic gospels.

¹ Harvey, *Exercitatio Anatomica de motu cordis et sanguinis*, 1628.

² However, consult also *The Origins of Modern Science, 1300-1800*, H. Butterfield (1949), *The Bases of Modern Science*, J. W. N. Sullivan (1928), *A History of Science—Its Relations with Philosophy and Religion*, W. C. D. Dampier-Whetham (1929), and for a viewpoint which gives prominence to the role of the biological sciences, *Science and Religion*, Charles E. Raven, (1953), the first part of the Gifford Lectures for 1951.

Christ continued the tradition of the Jewish prophets, a tradition common indeed to the early stages of most world religions, of teaching by saying, by parable and by example, seeking to move people to a way of life rather than a discipline of the mind. The Apostles were the first to be confronted with the task of intellectual clarification and many of the Epistles bear witness to this. One might point also to the sharp clash on Mars Hill between Paul and the Athenian Epicureans and Stoics which was surely prophetic of the future struggles of the Church with another world view. But one cannot say that Paul grasped, as Augustine would have done in his place, the intellectual force with which he had to grapple. The young Church was still expressing its faith aphoristically, epigrammatically, mystically: with passion but without system. Only in the fourth gospel, yet to be written at that date, was Platonism, filtered through the teachings of the Jewish philosopher Philo, to make its first impact on Christian thought: even so it was a metaphysical impact, not a scientific one.

Yet because patristic Christianity was lacking in science it must not be scornfully written down. The absence of science does not disqualify it intellectually; for what it offered was whole in itself and was indeed nothing less than the revolutionary world view of the relationship between God and man which has underlain all European thinking ever since, even that which is scientific, and even that too which is specifically atheist. This view of God and man in history emerges as a perfectly distinct doctrine of the importance of man's earthly life in time, and therefore is diametrically opposed to the Greek view of history which was dominated by a cyclic view of time, which thought in terms of the eternal return, and regarded the movement of history as a meaningless cycle. In the Old Testament man is a being under God, who destines him for some divine end. Jehovah is spoken of as a personal Being, seeking relationships with created men, and speaking uniquely to the chosen people. The prophets, with unforgettable anguish, seek to interpret God's will to his people. Man might suffer in this extraordinary relationship, but his importance could not be doubted. For the Christian, the Incarnation fulfilled the ancient search for the meaning of the destiny God has appointed for man. God reveals himself in a human person suffering and dying on earth. By the deed history itself is

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transformed. The promise of a return of Christ in glory, of the coming of the kingdom of God, is made to man. So God is doubly revealed as working with man in history, and as preparing and awaiting a certain climax in that history.

Above all, then, Christianity spoke about *man in history*. It preached a 'God-man' doctrine rooted in history, and creating its own doctrine of history. And perhaps only in an atmosphere which accorded man such importance in the scheme of things could the confident science of the seventeenth century have matured. Yet that, for the moment, is not the point; which is, rather, that the Judaeo-Christian philosophy contained little natural theology. In Genesis the creation is spoken of as an act of God's will, and man is treated as a natural creature made of the same substance as the rest of creation. But at the same time man is given command of natural creation, which comes into existence to serve and glorify both man and God. Over against God, man is a part of creation: but over against the rest of creation man is something like a god himself, talking with God His language and understanding His purpose in creation, imperfectly fulfilling it, and rebelling in such a way as to assert that he belongs rather to God's order than nature's. The absence of any natural theology beyond that, simply served to emphasize the historical and human note of the Judaeo-Christian religion. So powerful was the *God-Man* tension of its thinking that no one within its orbit seriously felt the need of a naturalistic approach.

In the light of this pattern of thinking, the absorption of Platonism into Christianity presented no great difficulties. Platonism, despite the *Timaeus*, was idealistic rather than naturalistic in temper. The platonic search for a moral basis for life fortified admirably the moral teachings of the Old and New Testament. God and the Idea of the Good were quickly identified as one. The creative *logos* was identified with Jesus, the Son of God: the still, perfect eternal Ideas with the heavenly perfection of which the earth was an imperfect copy. There is much felicity in the marriage of Platonism to Christian doctrine made by Augustine in that eighth book of *Civitas Dei* where he speaks of his intention of handling questions of natural theology 'with the most excellent philosophers', above all the glorious Plato 'endowed with perfection of understanding'—with

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such perfection indeed that Augustine is compelled to ask whether Plato might not have been influenced by the prophet Jeremiah. Augustine's debt to Plato is manifest. And it was his Platonism which made itself felt in the Renaissance and the Reformation. But between Platonic Christianity and the Revival of classical learning there was the long medieval period dominated by Aristotle.

The doctrines of Aristotle were far more difficult to body forth in Christian form, as we have seen already. The story of scholasticism is the record of just this failure to discover a final and durable synthesis between Christian inspiration and Aristotelian science. But why should Christianity have concerned itself at all with this? The answer is that ancient wisdom was venerated in any case. The more ancient it was, the nearer to Christ or to Moses, the closer it came to the source of things, and the greater therefore was the guarantee of its truth and value. Most ages of men—the modern is the great exception—have looked to antiquity for light, and the Dark and Middle Ages, living still under the shock of a vanished Empire and a lost Order, were more sensitive than most to the glamour of the past—though I would say also that this sensitivity lay below the surface. And perhaps just because of this, Aristotle's systematic teaching about the physical and biological worlds, about logic and mathematics, politics and law could not be resisted. Upon an age which lacked all such systematizations of its own and could not find a basis for them in the scriptures, Aristotle's theses made a tremendous impact. Even the corruptions of Aristotle which came from Arab sources were stimulating enough, but the sober translations into Latin made by William of Moerbeke and Henry of Brabant in the thirteenth century faced Christianity in the West with an encyclopaedia of such genius as to constitute almost a second revelation. We have seen how St. Thomas Aquinas, 'the master of those who think', sought to make a synthesis of the new learning with the old revelation. And Western Christianity has witnessed no greater effort at reconciliation.

The ingenious synthesis was destined to fail, for there could never be final proof out of science or logic of the Christian mysteries. There remained a gap between reason and doctrine only faith could bridge. The tendency to dismiss theology to a region where science and reason need not operate is apparent even before Francis Bacon

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and Thomas Hobbes. However, the significant development emerges that through the making of this medieval synthesis Aristotle became sanctified. His science became the official science of the Church, and his mode of reasoning the valid logic of the universities. In fact the Church adopted his *works* rather than his scientific method, and his writings became sacrosanct. They were valued as the final account of the nature of things, like Ptolemaic astronomy, rather than as tentative studies. It became the fashion to explain, to expound, to publish theses upon the works of Aristotle as one might write exegeses on the Scriptures; to embark upon parallel studies, moved by Aristotle's passion for direct observation, would have been regarded as impious. Friar Roger Bacon's originality was not appreciated by his time. And it was just this ossification of Aristotle's science which caused the scientific movement of the seventeenth century to be a movement *against* him and his scholastic upholders. Nineteenth century rationalism normally argued as if the movement of science against the Church were the movement of light against superstition. Oddly enough, it just was not so. It was a movement of the upstart, innovating science against the accepted authorities. If, however, Aristotle had never been endowed with an almost revelatory authority; if his science had been approached open-mindedly as a method rather than a doctrine, its mutability might more readily have been accepted. But when experiments and hypotheses threw doubt upon the central notions of Aristotelian science, as for example upon the canon that the earth was the centre of the universe, then immediately the innovators were involved in a struggle with authority. In fact, the effort of the Church to maintain an out-of-date science, for which in fact it had no scriptural authority, discredited the faith and made possible the growth of rationalism. As a force in Europe, it dates from the seventeenth century. The new science, in the effort to establish itself against authority, found rationalism an ally. As the centuries passed it often became difficult to disentangle science from the rationalism to which it was allied and which now appeared to it to be as much its natural climate as once Protestantism had been, or before that Scholasticism.

It must be said also that there was a second impetus given to the struggle against Aristotle: it came from the Reformation. Among such scholastics as Occam there was a plain distaste for the Aris-

totelianising of theology. The over-rationalisation of faith produced an inevitable reaction. The Reformation marked the rejection of the medieval synthesis, and a return to the platonist climate of St. Augustine. But this rejection was also a retreat. And just as the act of retrenchment, of withdrawal, signalized by the Reformation permitted the escape of the secular power from ecclesiastical censure or control, so the same can be said of science and philosophy. They escaped just because they were rejected and so all too easily began to be secularized.

Yet it must not be assumed that in their struggle against Aristotle the seventeenth century savants directed an attack against the Christian faith. On the contrary! Descartes, Hobbes, Bacon, Locke, and Newton all pursued simultaneously theological as well as scientific studies. They had no intention of dimming the glory of God, rather of adding to His lustre by revealing the beauty and majesty of His universe. If we look back and think of some of them as materialists, as both Hobbes and Bacon must seem to be, despite their protests, we have to remember that is not how they thought of themselves. But in the event these quasi-theological, quasi-scientific undertakings of theirs produced a curious *bouleversement*. It might be described as the triumph of natural over revealed theology, an ironic consequence of so much dislike of Aristotle. What men saw around them and could experiment with or theorise about, now began to seem a more important witness of God than strictly scriptural revelation.

Physical science, by the end of the century, arrived at the mechanical certainties of Newton. They were to dominate the world increasingly up to the present century; and they led, as we hardly need remind ourselves, to those astounding fruits in industry, technical skills, medicine and communications with which we are so familiar. But this triumph in the physical sciences, whose instruments were a series of skilful abstractions, came about by stripping man from the natural picture, except as neutral (and taken-for-granted) observer. Science ceased to be very conscious that man was the eye who was seeing and the brain who was formulating. And this process of abstracting man made easy the abandonment of the search for final or ultimate causes. Science became content to describe and to measure, with as much mathematical accuracy as

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possible, as a preliminary to the ascertainment of natural laws. And that which can be measured, and then controlled, and made to yield mathematically certain results—that which, in fact, is amenable to scientific methods—is readily conceived of as the reality against which all presently will be measured: it takes on the appearance of the higher, more solid reality, just because it is an arena in which prediction is possible. Whereas the things which seem to belong only to the subjectivity of man, like feeling, imagination, faith, or the secondary appearances of objects, become dubious, shifting, uncertain, illusory in the face of that other, more orderly *schema*. And it is quite suddenly man, the very man who is almost the only subject of Judaeo-Christian thought, who in his subjective nature becomes mysterious, incomprehensible and unreliable. To earlier ages it was not man who was uncertain, but matter. That was the real unknown and unknowable. Man was all transparency in comparison to it. Now all was changed; and man remains still the 'thing' which science does not know what to do with, unless to reduce him to some stratum of objects more amenable to analysis.

The marriage of the earlier science with Christianity was in terms of the subjection of Aristotle to revelation. But the marriage of the second science, that of the seventeenth century, witnessed to the victory of nature over man. God, the creator and mover of a brilliant universal order, began to displace the personal God of the Old and New Testaments. It was not only the newly-discovered immensity of the universe—the plurality of worlds and the insignificance of man—which produced this situation. The enduring order revealed in the cosmos seemed more important a revelation of the majesty of God than the miseries and passions of ephemeral man. What began to take place through the subjectivism of Descartes, the objectivism of Newton and the empiricism of Locke was the re-arrangement of the universal order from the order God-nature to God-nature-man. Sooner or later it occurred to many that the first and third terms might be disregarded in favour of the middle term common to them both. In fact not simply science, but a new religion was born, a new conception of God, which was to lend itself readily in future centuries to the unfolding Idea of Hegel, the organic universe of Whitehead, and the emergent Deity of Alexander. It is against this background that we must consider both

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the rise of science in prestige and power and the efforts of philosophers to grapple with its findings.

It has often been said that the rejection of the European philosophical tradition—that of scholasticism—left the thinker bereft of appeal to precedent or authority. Only his own reason could now be the judgment seat. René Descartes (1596–1650) transformed this isolation into a method, and for that reason cannot be ignored in his relationship to English philosophy. Descartes has described how, brought up to letters from infancy, he nevertheless ended his studies ‘embarrassed by so many doubts and errors’ that he felt he had gained nothing from them and there was no real learning in the world. He resolved ‘to seek no other science save that I could find in myself or in the great book of the world’.

Typical of a certain aimlessness in him in his youth was his service in the Dutch armies. He served with the Bavarian forces during the opening campaigns of the ‘Thirty Years’ War but there is not much evidence that he did anything except think about mathematics. The turning point in his life came when, in 1619, during bitter weather in Bavaria, he climbed into a vast stove, and stayed there most of the day meditating. Undoubtedly, this must have been one of those stoves Erasmus disliked, in which he said the Germans had the habit of living until the summer solstice; in one *Colloquy* Erasmus speaks of the Master of the Inn putting his head reluctantly out of his stove window, when a guest arrived, ‘like a tortoise from under his shell’. When Descartes climbed out, the philosophical premisses on which he was going to build his life had been thought out. The new ideas possessed him with the force of divine revelation and out of gratitude he vowed and carried out a pilgrimage to Our Lady of Loretto.

He left military service in 1621 to find the peace and seclusion necessary to carry on his work, which consisted, to begin with, in lying in bed and thinking to reform all thinking: ‘for all the opinions I had up to that time admitted into my belief, I could not do better than undertake once for all to turn them out. . . .’

The first of his famous rules was never to receive anything as true unless he knew it clearly and distinctly—or, as we might say to-day, unless it was self-evident; the second was to divide up the field of enquiry ‘into as many parcels as possible’ in order the better

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to solve problems by studying each parcel of evidence separately; in the third he undertook to think in an orderly fashion, moving from the simple and proven to the complex. The fourth rule was to make sure that no essential evidence was missed out. It was important not to be deceived:

'I will suppose, then, not an all-good God the source of truth, but some malign genius, extremely powerful withal and cunning, to have laid out all his pains on the task of deceiving me. I will think the sky, the air, the earth, colours, shapes, sounds and all outward things to be nothing else but a play of dreams with which he lays snare for my credulity. I will regard myself as not having hands, nor eyes, nor flesh and blood, nor any sense, but only a delusion that I have such things. I will remain obstinately fixed in this way of thinking and thus, should I not be able to discern aught that is true, yet . . . assent to no falsehood, nor shall that Deceiver, powerful and crafty as he may be, have power to impose upon me.'¹

All of which led to his momentous *cogito*:

'While I wanted to think everything false, it must necessarily be that I who thought was something; and remarking that this truth, *I think, therefore I am*, was so solid and so certain that all the most extravagant suppositions of the sceptics were incapable of upsetting it, I judged that I could receive it without scruple as the first principle of the philosophy that I sought.'²

The purpose of Descartes is not quite so destructive as it sounds. For he describes his work as a demonstration of the existence of God and of the distinctions between mind and body. When he reaches the point where he doubts the reality of everything except thought, he proceeds to show that the mere fact that man is aware of his own imperfection, and struggles against it, points to his knowledge of perfection. This knowledge could not have come from his own invention, or from the material world, which is possibly illusory anyhow. It could only have come from God. The proof that God exists enables him to reconsider the nature of the material world. Since all that he knows of the material world is in his thinking mind, he has been forced to doubt its real existence.

¹ *Meditations on the First Philosophy*, Meditation I. (*Oeuvres de Descartes*, publié Cousin, Paris, 1824-6, Vol. 1.)

² *Discourse on Method*, Pt. IV (*Oeuvres*, Cousin, Vol. 1).

But now that he has shown God to exist, and to be the author of his thinking mind, he argues that God cannot be a deceiver. These thoughts of a material world would never have been planted in him by God merely to deceive him, but must correspond to a real universe outside him. The universe is, therefore, a dual one: it contains both mind and matter.

Yet this conclusion involved him, and nearly all subsequent philosophers, in very great difficulties. Mind, Descartes said, is one substance, which is called thought, and matter is another, which is extended, that is to say occupies space. The two substances occupy different dimensions. What is the relation between the two parts of the universe? Hobbes, in his correspondence with Descartes, came down on the side of thinking *matter*. He wrote:

'We cannot think of leaping apart from that which leaps, of knowing, apart from a knower, or of thinking without a thinker. And hence it seems to follow that that which thinks is something corporeal; for, as it appears, the subjects of all activities, can be conceived only after corporeal fashion, or as in material guise, as M. Descartes himself afterwards shows. . . . It is not by another thought that I infer that I think; for though anyone may think that he has thought . . . yet we cannot think that we are thinking, nor similarly know that we know. For this would entail the repetition of the question an infinite number of times; whence do you know, that you know, that you know, that you know?'¹ From these and other inferences Hobbes concludes that that which thinks is material rather than immaterial.

Spinoza seized upon the conception that there are two basic substances, mind and matter, and converted them into attributes of God. God, the wholly positive and infinite Being, must have an infinite number of attributes unknown to us. Mind and matter,

¹ In *Oeuvres de Descartes*, Cousin, Vol. I, p. 469, it reads: 'Certes, ce n'est point d'autre chose que de ce que nous ne pouvons concevoir aucun acte sans son sujet, comme la pensée sans une chose qui pense, la science sans une chose qui sait, et la promenade sans une chose qui se promène. Et de là il semble suivre qu'une chose qui pense est quelque chose de corporel; car les sujets de tous les actes semblent être seulement entendus sous une raison corporelle, ou sous une raison de matière, comme il a lui-même montré un peu après par l'exemple de la cire. . . . Or ce n'est pas par une autre pensée que j'infère que je pense: car encore que quelqu'un puisse penser qu'il a pensé . . . il est tout-à-fait impossible de penser qu'on pense, ni de savoir qu'on sait: car ce seroit une interrogation qui ne finiroit jamais, d'où savez-vous que vous savez que vous savez que vous savez, etc.?'

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which we know, are not substances in the sense in which Descartes thought of them, the primary stuff, so to speak, of the universe, but simply two aspects of the infinite and eternal substance which is God. Man is not really the unique and separate individual Christianity imagines him to be, but more or less a part of God. Thus Spinoza carried Cartesian arguments triumphantly forward to a universal pantheism.

Leibniz, the philosopher Voltaire satirized as Doctor Pangloss, went the other way. From Cartesian premisses he argued that the universe consists of an infinite number of substances or 'monads' which were, however, spiritual rather than material in character. And so a union of souls rather than an assembly of atoms became, for him, the final reality. We shall see how Hume carried the Cartesian doubt to the mind itself. Before long, indeed, the three realities on which Descartes himself believed he could rest his philosophy, God, mind, and matter, were all weakened by the turning against them of his own formidable scepticism. The modern attack has been to turn this weapon against the Cartesian doubt itself. Thus the late Professor H. A. Prichard in *Knowledge and Perception* argues that Descartes confused the act of knowing with the act of believing or being convinced, or being persuaded, or having an opinion. Knowing, however, is being sure, and is not to be arrived at by doubting that one knows. And he pokes gentle academic fun at Descartes' very firm resolve to suspect that he is being deceived at every turn, and to trust nothing:

'And Descartes, each time he introduces a new doubt, has, in order to do so, to introduce a new thought or conviction. Thus to represent himself as doubting whether any of his thoughts based on perception were true, he has to represent himself as thinking without question that certain of these past thoughts were false. Again, to take one more instance, to represent himself as doubting whether he is awake, he has to represent himself as thinking without doubt that dreaming is not distinguished from waking by any difference of character. But he has no business to use such a thought or conviction, and he need only have reflected, to have doubted the truth of the thought and therefore to have removed the thought, and therefore also the doubt to which it gave rise.'¹

¹ Op. cit., Oxford, 1950, p. 79.

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But by far the most devastating use of the sceptical weapon has come in our own time from Bertrand Russell, who turns the Cartesian doubt against the Cartesian ego itself.

'Descartes' indubitable facts are his own thoughts—using "thought" in the widest possible sense. "I think" is his ultimate premiss. Here the word "I" is really illegitimate; he ought to state his ultimate premiss in the form "there are thoughts". The word "I" is grammatically convenient, but does not describe a datum. When he goes on to say "I am a *thing* which thinks", he is already using uncritically the apparatus of categories handed down by scholasticism. He nowhere proves that thoughts need a thinker, nor is there reason to believe this except in a grammatical sense.¹

Yet Descartes was more important to his age as scientist, mathematician, even as encyclopaedist. In his *Le Monde*, for instance, he planned to give an account of the development of the universe from chaos to man. As a scientist he believed that all the phenomena of physics could be reduced to the geometry of abstract mathematics. The physical world consisted of two properties, extension and motion. 'Give me extension and motion,' he wrote, 'and I will construct the world.' Matter was extension. It was that which occupied three dimensions. Space, therefore, could not be conceived by him as independent of matter, and for this reason there was no vacuum, no 'empty space'. It was not only that nature abhorred a vacuum: a vacuum was impossible. This led him into astronomical theories opposed to those of Newton.

At first Descartes adopted the Copernican hypothesis of the motion of the earth round the sun; but when Galileo was condemned in 1633 he abandoned this in favour of a reconciliation between the Copernican theory and the officially accepted view. His principle of reconciliation was the vortex. If there was no empty space, and matter was therefore continuous to the furthest stars, how could the motion of the heavens be explained? There had to be some form of universal motion, for no local motion through the solid material of the universe could be conceived. 'All the motions which take place in the world are in some way circular,' he wrote in *Le Monde*. 'That is to say—when a body leaves its place, it always enters that of another, and this enters that of yet another,

¹ *A History of Western Philosophy*, London, 1946, p. 589.

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and so to the final one which occupies at the same instant the place left by the first. There is thus no vacuum between bodies when they move, any more than when they are at rest.¹ Motion, in fact, is not imparted across empty space but as in Aristotelian science from one body to the next with which it is in contact. And motion is not something which inheres in material bodies, but is imparted originally from God.

How, in a universe packed tight with matter, was the movement of the stars and planets to be explained? Descartes formed the theory of vortices, or whirlpools in matter. Matter in motion formed vortices—'all motions are in some way circular' and the vortex was therefore natural. Matter was of various degrees of coarseness due to the attrition of matter against matter. The finest kind of matter formed the radiant suns: the next in purity the transparent heavens: the grossest sort became the planets and other opaque bodies. The opaque planets were the centres of whirlpools of invisible matter. This fixed them in position. But at the same time the smaller vortices were caught in larger vortices of which the sun was the centre and it was this which swept them round and round the sky. So that the universe was one vast whirlpool. Descartes even produced an ingenious explanation for the irregular behaviour of comets.

It was this theory, a most popular one, which Newton had to break down in order to establish firmly the new mechanics of the universe. Descartes' authority ran high on the continent, and there was perhaps some national pride in the support France gave to him, a pride of the kind that showed itself again in the quarrel between Newton and Leibniz over the discovery of the calculus. ('The English wish to pass as the only inventors', said Leibniz.) Voltaire, who met Berkeley and attended Newton's funeral at Westminster Abbey, wrote amusingly about the conflict between Cartesian and Newtonian science.

'A Frenchman who arrives in London will find Philosophy, like

¹ *Oeuvres de Descartes*, Cousin, Vol. IV, Chap. IV, p. 232. But also (p. 260) in laying emphasis once again on circular motion he adds: 'toutefois chacune de ses parties en particulier tend toujours à continuer le sien en ligne droite. Et ainsi leur action, c'est-à-dire l'inclination qu'elles ont à se mouvoir, est différente de leur mouvement.' It is *Le Monde* which contains (Chap. VIII in particular) descriptions of Descartes' vortices.

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every thing else, very much chang'd there. He had left the World a *plenum*, and now he finds it a *vacuum*. At Paris the universe is seen, compos'd of Vortices of subtile Matter; but nothing like it is seen in London. In France 'tis the pressure of the Moon that causes the tides; but in England 'tis the sea that gravitates towards the Moon; so that when you think that the Moon should make it Flood with us, those Gentlemen fancy it should Ebb, which, very unluckily, cannot be prov'd. For to be able to do this, 'tis necessary that the Moon and Tides should have been inquir'd into, at the very instant of Creation. You'll observe farther, that the Sun, which in France is said to have nothing to do in the Affair, comes in here for very near a quarter of its assistance. According to your Cartesians, every thing is perform'd by an impulsion, of which we have very little Notion; and according to Sir Isaac Newton, 'tis by an Attraction the cause of which is as much unknown to us. At Paris you imagine that the earth is shap'd like a Melon, or of an oblique Figure; at London it has an oblate one. A Cartesian declares that Light exists in the air; but a Newtonian asserts that it comes from the Sun in six Minutes and a half. The several operations of your chymistry are perform'd by Acids, Alkalies, and subtile matter; but attraction prevails even in Chymistry among the English.¹

Isaac Newton was born prematurely at Woolsthorpe, near Grantham, on Christmas day 1642. His father died a few months before, and his mother was shortly to marry again. Young Newton attended the Grammar School at Grantham and he is said to have shown a solitary disposition, and little spirit, until a fight with another boy roused in him a spirit of emulation. He was physically weak, but gifted with much manual dexterity and took delight in carving and building models, in painting and drawing. At the age of fourteen he left school to assist his mother on her farm. In this he showed not even polite interest, neglecting farm work for his books and algebraical problems. It is related that when his uncle, the rector of Burton Coggles, found him under a hedge working

¹ *Letters Concerning the English Nation* by M. de Voltaire, trans. by John Lockman (?), London, 1733. This English translation appeared a year before the first French edition, *Lettres écrites de Londres sur les Anglois*, London, 1734. With the addition of a letter on Pascal, the *Lettres* became *Lettres Philosophiques* which appeared in France in 1734, pirated, and in an authentic edition by Jore of Rouen: it was ordered to be burnt and its author and various printers were pursued and persecuted. Cf. Voltaire, *Lettres Philosophiques*. Ed. F. A. Taylor, Oxford, 1948.

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out a mathematical problem when he should have been attending to farm work, he recommended that the boy should be sent back to school to prepare for Trinity College, Cambridge; with this his mother far-sightedly agreed.

At the age of nineteen Newton matriculated as a subsizar, three years later he was elected scholar. In 1667 he was elected a Fellow of Trinity and from thence onwards the College was his home: its comforts confirmed him in his bachelor inclinations. He became Lucasian Professor of Mathematics in 1669, his friend Barrow having resigned in his favour. These were years of unparalleled intellectual activity, and his genius came to unexpected fruition when, a few years before his appointment to the Professorship, he was forced from Cambridge by the plague and spent two solitary years in the country at work on mathematical and physical problems. Conduitt, in his *Memoirs*, records that 'In the year 1665, when he retired to his own estate, on account of the plague, he first thought of his system of gravity, which he hit upon by observing an apple fall from a tree'. Voltaire supports the story by an account of the incident as related to him by Newton's favourite niece, Catherine Barton, but he gives the year as 1666. It seems established that in 1665 he discovered what is known as the binomial theorem and then the differential calculus ('fluxions'); but he was never a man to rush his discoveries into print. On the contrary, he seems sometimes to have forgotten that he made them. According to his own account he began to think of gravity as extending to the orb of the moon at that time. When he compared the force requisite to keep the moon in her orbit with the force of gravity at the surface of the earth, he found them 'to answer pretty nearly'. At the time of the dispute with Leibniz, Newton made an entry in his personal note-book which confirms this: it tells us too that he was familiar with Descartes' work, with the popularizations of it made by Schooten, and with the findings of the foremost mathematicians of his time, Oughtred and Wallis.

'July 4, 1699.—By consulting an account of my expenses at Cambridge, in the years 1663 and 1664, I find that in the year 1664, a little before Christmas, I, being then a Senior Sophister, bought Schooten's *Miscellanies* and Cartes' *Geometry* (having read this geometry and Oughtred's *Clavis* clean over half a year before), and

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borrowed Wallis's works, and by consequence made these annotations, out of Schooten and Wallis, in winter between the years 1664 and 1665. At such time I found the method of Infinite Series; and in summer 1665, being forced from Cambridge by the plague, I computed the area of the hyperbola at Boothby, in Lincolnshire, to two and fifty figures by the same method. Is. Newton.¹

We catch a glimpse of Newton the Alchemist in a letter which he sent to a friend about to embark on the Grand Tour. In this he bids him to make enquiries about methods of obtaining gold from running rivers in Bohemia by the use of mercury, and commends him to 'Observe the products of nature in several places, especially in mines, with the circumstances of mining and extracting metals or minerals out of their ore and refining them; and, if you meet with any transmutations out of one species into another, (as out of iron into copper, out of any metal into quicksilver, out of one salt into another, or into an insipid body, etc.) those above all will be worth your noting, being the most luciferous, and many times luciferous experiments too in philosophy.'²

Humphrey Newton, his secretary, has left an account of the scholar's alchemical relaxations later in his life: 'About six weeks at spring, and six at fall, the fire in the laboratory scarcely went out, which was well furnished with chemical materials as bodies, receivers, heads, crucibles, etc., which was [sic] made very little use of, the crucibles excepted, in which he fused his metals; he would sometimes, tho' very seldom, look into an old mouldy book which lay in his laboratory, I think it was titled *Agricola de Metallis*, the transmuting of metals being his chief design, for which antimony was a great ingredient.'³

From the same source we get a vivid picture of the self-absorbed genius. 'His carriage then was very meek, sedate, and humble, never seemingly angry, of profound thought, his countenance mild, pleasant, and comely. I cannot say I ever saw him laugh but once, which was at that passage which Dr. Stukeley mentioned in his letter to your honour, which put me in mind of the Ephesian

¹ In Newton's personal note-book. (Quotation from *Isaac Newton: A Biography* by Louis Trenchard More, New York, 1934, p. 36.)

² Letter to Aston (from *Isaac Newton*, More, p. 50).

³ *Ibid.*, p. 249.

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philosopher, who laughed only once in his lifetime, to see an ass eating thistles when plenty of grass was by. . . . I never knew him to take any recreation or pastime either in riding out to take the air, walking, bowling, or any other exercise whatever, thinking all hours lost that was [sic] not spent in his studies, to which he kept so close that he seldom left his chamber except at term time, when he read in the schools as being Lucasianus Professor, where so few went to hear him, and fewer that understood him, that oftentimes he did in a manner, for want of hearers, read to the walls.¹

Newton's was a life of scientific controversy—into which he himself was drawn with the utmost reluctance, regarding philosophy as 'such an impertinently litigious lady that a man had as good be engaged in lawsuits as have to do with her'—but beyond that his days were almost as cloistered and uneventful as Immanuel Kant's. He became a member of Parliament for a time for his University, and he was first Warden, then Master of the Mint—a sinecure. He became President of the Royal Society in 1703 and was re-elected every year until his death. In 1705 he was knighted. He died painfully of stone in 1727.

There were many real scientific difficulties to be overcome before the Newtonian mechanics of the universe could be firmly established. The first was the need for a satisfactory theory of motion and the second, allied to it, was the necessity for a theory of the vacuum; the third was to dispose of the notion which Gilbert and Kepler had encouraged, that magnetism and gravity were one and the same thing. Finally, the notion that perfection demanded that motion had to be circular (it is a constant of Copernican theory, and we have already examined Descartes' arguments about it) had to be abandoned. Isaac Newton built, in these things, upon the work of his contemporaries and predecessors. Herbert Butterfield has shown most lucidly in *Origins of Modern Science* the importance which must be attached to the seventeenth century search for a theory of motion which satisfied the evidence.² Was it true that all heavy bodies had a natural motion towards the earth? And was it true that a continuous force needed to be imparted to a body to

¹ Letter of Humphrey Newton to Conduitt (*ibid.*, pp. 246-7).

² London, 1949, p. 3 particularly, but generally too. I am much indebted to this brilliant essay in this chapter.

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maintain it in motion? Was it a fact that a projectile, when its force was expended, dropped like a stone to earth?

It was Galileo who first produced a satisfactory definition of the law of inertia, the law that a body set in motion will continue in that motion unless deflected from it by a superior force or slowed down by the resistance of the medium through which it travels. In his *Dialogues on the New Science* (note that it was translated into English in 1665) Galileo wrote: 'Moreover it is proper to assume that any velocity observed in a moving body is, on account of its very nature, unchangeable so long as external causes of acceleration, or retardation, are taken away, a condition which obtains only on a horizontal plane: for in motion down an inclined plane there always exists a cause of acceleration, and in motion up an incline there is retardation. From which it follows in like manner that motion on a horizontal plane is everlasting and unchangeable: if it is thus constant, it will be neither weakened nor slackened and much less destroyed.'¹

In addition to the law of inertia, Galileo propounded the parallelogram law, which had most important consequences, for it made motion mathematically measurable. If natural motion was in a straight line from which a body only deviated when subject to a second force, that meant that *observable* motion was subject to the pull of two or more forces. The cannon ball shot out of the gun, soared into the heavens, then dropped to earth. By the law of Galileo the second force was responsible for its return to earth. Could the forces be calculated? By Newtonian definition it became this—when two forces act simultaneously, the effect is as if they acted successively. If a moving body is subject, say, to two forces directed along the lines AB and AC respectively and proportioned to the lengths of those lines, the effect of their simultaneous action is proportional to the length of the diagonal of the parallelogram of which AB and AC are two of the sides, and is directed along it. This made it possible to plot the path of projectiles: for example, if the forces are known it is possible to determine where the projectile will be if we suppose that it first moves along the line AB for one second (that is horizontally) and then starting from rest falls vertically for one second, with uniform acceleration in the plane

¹ Ed. Alberi, Vol. XIII, p. 200 (from *Isaac Newton, More*, p. 281).

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BC; or, given the path of a projectile, or the orbit of a planet, to calculate the forces necessary to maintain it in the path which it has taken.

Butterfield has shown that Galileo in these two laws, like Newton after him, was abstracting the whole problem of motion and thinking of it in empty space, without obstacle—that is, in such conditions as are to be found only in the imagination and never in reality. The conception of unimpeded action in unresisting space made possible the necessary concept of a vacuum, and in its turn this made possible the theory that the orbits of planets could be explained by a force acting across empty space: the theory of gravity in fact which was born in Newton when, seeing an apple fall to earth, he imagined that same power extending to the moon. But before this junction of ideas, simple to us only because we have grown up in a Newtonian tradition, was possible, the Cartesian theory of vortices had to be driven from the field. Newton demonstrated that dynamically the whole Cartesian system was impossible, that it must break down, and that the slowing up of planetary orbits at aphelion could not be reconciled with the uniform vortices of Descartes.

In *Principia* he wrote this about the nature of space:

'All spaces are not equally full; for if all spaces were equally full, then the specific gravity of the fluid which fills the region of the air, on account of the extreme density of the matter, would fall nothing short of the specific gravity of quicksilver, or gold, or any other most dense body; and, therefore, neither gold, nor any other body, could descend in air; for bodies do not descend in fluids, unless they are specifically heavier than the fluids. And if the quantity of matter in a given space can, by any rarefaction, be diminished, what should hinder a diminution to infinity? . . . If all the solid particles of all bodies are of the same density, nor can be rarefied without pores, a void, space or vacuum must be granted.'¹

It is as a continuation of this argument that he effectively distinguished between *magnetism* and *gravity*. The importance of this distinction was a considerable one for it permitted solar gravity to be considered in isolation and without the confusion inevitable if

¹ *The Mathematical Principles of Natural Philosophy* by Isaac Newton. Tr. Andrew Motte, Revised W. David, London, 1803, Vol. II, p. 176.

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its force was confused with that produced by terrestrial magnetic experiments. "The power of gravity is of a different nature from the power of magnetism; for the magnetic attraction is not as the matter attracted. Some bodies are attracted more by the magnet; others less; most bodies not at all. The power of magnetism in one and the same body may be increased and diminished; and is sometimes far stronger, for the quantity of matter, than the power of gravity; and in receding from the magnet decreases not in duplicate but almost in the triplicate proportion of the distance, as nearly as I could judge from some rude observations."¹ Such were the steps by which gravitation came to be established as the law of mutual action between masses of matter which is such that every mass tends towards every other mass with a force varying directly as the product of the masses and inversely as the square of their distances apart. And of the whole system maintained in such beautiful regularity by the operation of this simple law, Newton wrote:

"The six primary planets are revolved about the sun in circles concentric with the sun, and with motions directed towards the same parts, and almost in the same plane. Ten moons are revolved about the earth, Jupiter and Saturn, in circles concentric with them, with the same direction of motion, and nearly in the plane of the orbits of those planets: but it is not to be conceived that mere mechanical causes could give birth to so many regular motions, since the comets range over all parts of the heavens in very eccentric orbits; for by that kind of motion they pass easily through the orbs of the planets, and with great rapidity; and in their aphelions, where they move the slowest and are detained the longest, they recede to the greatest distances from each other, and thence suffer the least disturbance of their mutual attractions. This most beautiful system of sun, planets, and comets, could only proceed from the counsel and dominion of an intelligent and powerful being . . . especially since the light of the fixed stars is of the same nature with the light of the sun, and from every system light passes into all other systems: and lest the systems of the fixed stars should, by their gravity, fall on each other mutually, he hath placed those systems at immense distances one from another."²

And there follows upon this, it is as well to recall, a *ludatio* of

¹ Loc. cit.

² Ibid., Vol. II, p. 310.

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God, who is eternally the same God, omnipresent not simply as will but as incorporeal substance. 'He exists *always* and *everywhere*. Whence also he is all similar, all eye, all ear, all brain, all arm, all power to perceive, to understand, and to act.' 'And thus much concerning God; to discourse of whom from the appearances of things does certainly belong to Natural Philosophy.'¹

But the third book of the *Principles* which ends with this tribute to God begins by the definition of the 'Rules of Reasoning in Philosophy' which cannot be omitted from any consideration of Newton's labours, for they firmly established the disciplines under which scientific investigation was to be conducted from that time forth. The Newtonian scientific method is this:

'Rule I. We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances.

'Rule II. Therefore to the same natural effects we must, as far as possible, assign the same causes.

'Rule III. The qualities of bodies, which admit neither intension nor remission of degrees, and which are to be found to belong to all bodies within the reach of our experiments, are to be esteemed the universal qualities of all bodies whatsoever.'

(Here is part of the justification of this important proposition: 'For since the qualities of bodies are only known to us by experiments, we are to hold for universal all such as universally agree with experiments; and such as are not liable to diminution can never be quite taken away. We are certainly not to relinquish the evidence of experiments for the sake of dreams and vain fictions of our own devising; nor are we to recede from the analogy of Nature, which uses to be simple, and always consonant to itself.' Of course he had the theory of gravity in mind, and was here defending himself against the accusation that he had introduced an occult principle into science: he was saying, in effect, that gravity was a force known to us by experiment or test and we should be sensible to accept it as a universal quality of bodies. It was true that the recognition of its presence was not the same thing as an explanation of its cause; but on that score he said he framed no hypothesis, 'and hypotheses'—theories unsupported by proof—'whether metaphysical or physical,

¹ *Ibid.*, Vol. II, pp. 312-3.

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whether of occult qualities or mechanical, have no place in experimental philosophy'.)

'Rule IV. In experimental philosophy we are to look upon proportions collected by general induction from phenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, till such time as other phenomena occur, by which they may either be made more accurate, or liable to exceptions.'¹

It was Alexander Pope who summed up Newton's work in the famous couplet which is engraved in stone on the wall of the room in which Newton was born:

*Nature and Nature's Laws lay hid in night:
God said, Let Newton be!—and all was light.*

But it was also Pope who summed up the entire Newtonian universe, and man's insignificance within it, in *Essay on Man*:

*All are but parts of one stupendous whole,
Whose body Nature is, and God the soul:*

and man is mistaken if he assumes that the cosmos can be rearranged for his benefit:

*All this dread ORDER break—for whom? for thee?
Vile worm!—Oh Madness! Pride! Impiety!*

*All Nature is but Art, unknown to thee:
All Chance, Direction, which thou canst not see:
All Discord, Harmony not understood:
All partial Evil, universal Good:
And, spite of Pride, in erring Reasons' spite,
One truth is clear, WHATEVER IS, IS RIGHT.*

Isaac Newton believed in the independence or absoluteness of time and space. Space consisted of points and time of instants, and the points, because of their independence, could be 'occupied' by portions of matter in the same way that a tenant occupies a house: these same portions of matter endured through time. His theory of

¹ *Ibid.*, Vol. II, pp. 160-2.

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matter was an atomic one which was admirably adapted to the notion of time and space as the neutral stage on which matter performed. He declared that it seemed probable that God, in the beginning, 'formed matter in solid, massy, hard, impenetrable, moveable particles; of such sizes and figures, and with such other properties, and in such proportion to space, as most conduced to the end for which He formed them; and that these primitive particles being solids are incomparably harder than any porous bodies compounded of them; even so very hard as never to wear or break in pieces: no ordinary power being able to divide what God himself made One.'¹ It was an atomic theory which constituted a return to Democritus and Lucretius. The man who had most to do with its introduction to chemistry was Robert Boyle (1627-91). Boyle, the seventh son of the great Earl of Cork, and at one time a student of the science of Galileo in Florence, sought to bring to physics and chemistry the clarity and order Newton had brought to the larger world of astronomy. Boyle was a believer in the mechanical theory of nature and once compared the universe to the famous clock at Strasbourg:

"The several Pieces making up that curious figure are so fram'd and adapted, and are put into such a motion, as though the numerous wheels and other parts of it knew and were concerned to do its Duty, and the various Motions of the Wheels, and other parts concur to exhibit the Phenomena designed by the Artificer of the Engine, as exactly as if they were animated by a common Principle, which makes them knowingly conspire to do so, and might, to a rude Indian, seem more intelligent than Cunradus Dayspodius himself that published a description of it."²

His works are many and various and include works of theology—his will founded the Boyle lectures to prove the Christian religion against atheists, theists, pagans, Jews and Mohammedans—but his importance for us lies in the attack he made upon the alchemical theories current still in his day. Alchemy adhered rigidly to Aristotelian physics, though it had contrived to cloud their outlines. Aristotle postulated four fundamental principles in the constitution

¹ *Optics*, Bk. III. (*Isaac Newtoni Opera Quae Exstant Omnia*, Comm. and illus. Horsley, 5 vols., 1779-85, Vol. IV, p. 260.)

² *The Usefulness of Experimental Natural Philosophy*, 1663, Pt. I, pp. 70-72.

of matter—hotness, moistness, coldness and dryness. By conjugation of the hot and the wet we arrive at the element, *air*: wet and cold produce *water*: cold and dry, *earth*: hot and dry, *fire*. Earth, air, fire, water were *the four elements* which entered in varying degrees into the composition of all material bodies. But in the course of time this theory had become somewhat elaborated under alchemy. There arose the theory, for instance, of the *tria prima*, or three hypostatical principles. An element of symbolism entered into theory: alchemists identified sulphur with the element fire, and mercury, because of its volatility, with the element water, and argued that all metals were combinations of these two primary substances. To this significant pair, *salt* was added as representing *body* where mercury represented *spirit* and sulphur *soul*. Thus in a metal, as in man, the alchemist sought for body, soul and spirit. Salt was sometimes thought of as a catalyst, or unchanging principle necessary to change in others. Paracelsus (c. 1490–1541), the most extraordinary alchemist of all time, wrote that the seven metals are born of a threefold union of which 'Mercury is the spirit, Sulphur is the soul, and Salt is the body'. But the same three principles were also likened to phlegm, fat and ash: 'The phlegma is Mercurious, the fat is Sulphur, and the ash is Salt. For that which smokes and evaporates over the fire is Mercury; what flames and is burnt over is Sulphur; and all ash is Salt.' Sulphur and fat were also likened to each other because of their yellow colour.

The vague, mystical and flowery language of alchemy covered (and hindered) a genuine but occult search for the means to transmute metals, particularly base metals into gold, a theme which crops up again and again in European art and which, in English literature, can be studied in Chaucer's *Canon's Yeoman's Tale* and Ben Jonson's boisterous satire, *The Alchemist*. It can easily be understood that alchemical theory obstructed the advance of chemistry in the same way as Descartes' vortices hindered the genuine mastery of the relationships of heavenly bodies. And Boyle's attack in his first book, *The Sceptical Chymist*, was on all such Aristotelian or 'spagirite' mystification. 'And indeed, when in the writing of Paracelsus I meet with such phantastick and unintelligible discourses as that writer often puzzels and tires his reader with, fathered upon such excellent experiments, as though he seldom clearly teaches, I

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often find he knew; methinks the chymists, in their searches after truth, are not unlike the navigators of Solomon's Tarshish fleet, who brought home from their long and tedious voyages, not only gold, and silver, and ivory, but apes and peacocks too.¹

He argued that the Aristotelian elements were not elements in the real sense of the word, not irreducible that is, for he, in his own experiments, had combined and reduced them. Whereas *other* substances, such as gold, for instance, which alchemists pretended to manufacture or to break up into simpler constituents, proved in fact to be irreducible and to conform to the definition of an element. He concluded that there were many elements and 'that it may as yet be doubted, whether or no there be any determinate number of elements; or, if you please, whether or no all compound bodies, do consist of the same number of elementary ingredients of material principles.'²

He was able to demonstrate the distinction between mixtures and compounds, and he perceived how bodies could be joined together and separated again. He followed Descartes in thinking that the complicated material world resolved itself down to *matter* and *motion*, to which he added a third principle, *rest*; however, in the examination of particular material bodies at rest the principles were twofold, *matter* and *structure*. His theory of structure was not the Aristotelian form, or inner principle determining the nature of the material body, but something we should to-day describe as molecular structure. Given the atoms or particles of Newtonian physics as the base of all matter, it followed that the *manner* of the arrangement of these particles became all important in the differentiation of one type of matter from another. Boyle advanced the corpuscular theory and visualized matter as composed of elaborate clusters of corpuscles, some of which clusters could, and some of which could not, be broken down. The corpuscular theory is to be found defined in the 'Propositions' spread through the pages of *The Sceptical Chymist*.

Boyle was an ardent disciple of Bacon and a propagandist for the inductive method. He experimented endlessly. It is noteworthy that he was one of the founders of that 'Invisible College' which

¹ Op. cit., Conclusion. (Everyman Edn., p. 227.)

² Ibid., The Fifth Part (p. 185).

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met sometimes at his lodgings in Oxford, and out of which came the 'Royal Society for improving natural knowledge'. Charles II granted it a charter and named Boyle a member of the founding council. The names of nearly all famous seventeenth century scientists and savants were associated with this effort at the communication of learning. The Royal Society marked the new temper of the times by banning theology and first causes from its discussion, but its members argued about everything else endlessly—vortices, the circulation of the blood, Mr. Boyle's air-pump, which he demonstrated, the claim as to the invention of fluxions, the nature of mercury, the properties of the powdered horn of a unicorn and the transfusion of the blood of a dog into a man. 'Two subjects, God, and the Soul, being only forborne,' wrote the Society's historian, Bishop Sprat. In the view of the Fellows, 'the natural philosopher is to begin where the moral ends'. They even turned their attention to the English language which was in need of a Defoe to simplify it; when Defoe was only five years old this was written about the purposes of the Society as they affected language:

'There is one thing more, about which the *Society* has been most solicitous; and that is the manner of their *Discourse*: which, unless they had been only watchful to keep in due Temper, the whole Spirit and Vigour of their *Design* had been soon eaten out by the Luxury and Redundance of speech. . . . And, in a few Words, I dare say that of all the studies of Men, nothing may be sooner obtain'd, than this vicious Abundance of *Phrase*, this Trick of *Metaphors*, this Volubility of *Tongue*, which makes so great a Noise in the World. . . . It will suffice my present Purpose, to point out, what has been done by the *Royal Society*, towards the correcting of excesses in *Natural Philosophy*, to which it is of all others, a most profest enemy. They have therefore been more rigorous in putting in Execution the only Remedy, that can be found for this *Extravagance*; and that has been a constant Resolution to reject all Amplifications, Diggessions, and Swellings of Style; to return back to the primitive Purity and Shortness, when men deliver'd so many *things* almost in an equal Number of *words*. They have exacted from all their Members a close, naked, natural way of Speaking, positive Expressions, clear Senses, a native Easiness, bringing all Things as near mathematical Plainness as they can; and preferring the Language of

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Artizans, Countrymen, and Merchants, before that of Wits, or Scholars.²¹

With the birth of the Royal Society science established for itself, if not an ecclesia, at least a Supreme Court of Appeal. But as for its discipline of language, and readiness to deliver so many *things* in as many *words*, the number of things science wished to name rapidly outran the supply of words, and science was forced to invent, often in so florid and metaphorical a manner as to leave the wits standing. It lost, indeed, the candoluminescence of its early years: technical terms flourished like weeds in the absence of a gardener, and our lives are now closed round by a jungle of them.

²¹ *History of the Royal Society* by Thomas Sprat, 4th Edn., London, 1746, pp. 111-13.

CHAPTER FOUR

The Appeal to Plato

BENJAMIN WHICHCOTE (1609-1683)

HENRY MORE (1614-1687)

RALPH CUDWORTH (1617-1688)

THOMAS TRAHERNE (c. 1637-1674)

When Pope wrote of nature as the body to which God was the soul, or Newton spoke of God as the same God, always and everywhere, omnipresent in his very substance, not simply in his will, they were echoing the ideas of the Cambridge Platonists, and using their language. There is a strong mystical strain to be found in Isaac Newton which certainly must have been stimulated by his friend, Dr. Henry More, one of the most eloquent of the Platonists. A letter Newton wrote to Henry Oldenburg, Secretary of the Royal Society, gives interesting evidence of this:

'Where I say that the frame of nature may be nothing but aether condensed by a fermental principle, instead of those words write, that it may be nothing but various contextures of some certain aethereal spirits, or vapours, condensed as it were by precipitation, much after the manner that vapours are condensed into water, or exhalations into grosser substances, though not so easily condensable; and after condensation wrought into various forms, at first by the immediate hand of the Creator, and ever since by the power of Nature, who by virtue of the command, "Increase and multiply", became a complete imitator of the copies set her by the Protoplasm. Thus perhaps may all things be originated. . . .'¹ This is almost

¹ Macclesfield's Collection of *Correspondence of Scientific Men in the 17th Century*, Oxford, 1841, Vol. II, p. 389.

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exactly the platonic kind of sentiment to be discovered in Henry More's *Immortality of the Soul*.

The Cambridge Platonists of the seventeenth century sprang into existence from two distinct causes. The first was the atomic materialism of Thomas Hobbes, and the second the dogmatism and intolerance of much contemporary Christianity. The high church movement of Laud, the bigoted and persecuting temper of the Presbyterians, the spread of obscure and often ignorant sects claiming Divine illumination were all equally intolerable to men of learning, who, anticipating the eighteenth century, saw a special role for reason—'the candle of the Lord'—within religion, to sweeten and temper it, and to lead to the pursuit of what Thomas Traherne called 'Felicity'. Traherne's felicity was as opposed to the sternness of Puritan doctrine as any creed could be. It did not reject, but rejoiced in the things of the Lord, delighting especially in 'orient and immortal' nature, and, what must have been shocking to the Puritan temper, the human body itself, an angelic thing: 'shall I not then delight in these most sacred treasures' the poet asks:

*Survey the Skin, cut up the Flesh, the Veins
Unfold; the Glory there remains:
The Muscles, Fibres, Arteries, and Bones,
Are better far than Artificial Stones.¹*

In religion, therefore, the influence of the Platonists was on the side of tolerance and humanism, and towards a mystical enjoyment of the Lord rather than passionate self-accusation of sin. It was for this they were called 'the latitude men'. Yet in the philosophical field they were far from latitudinarian. At a time when philosophy was heading towards materialism and beginning to identify the good with the expedient or the pleasurable, the Platonists stood firmly against all such moral relativism: they taught an absolute moral law which they said was as demonstrable as arithmetic.

The founder of the movement was Benjamin Whichcote (1609–1683). Whichcote, a Shropshire man, was educated at Emmanuel College, Cambridge, and became Provost of King's when his predecessor was ejected in 1644 by the Parliamentary Visitors. In 1650 he became Vice-Chancellor of Cambridge University, but lost his

¹ *Poetical Works of Thomas Traherne*, London, 1932.

BENJAMIN WHICHCOTE

post upon the restoration, for he was a friend of Oliver Cromwell. He was able to take refuge in a London living. Whichcote's leadership of the Platonists rested in his preaching, which was brilliant: as early as 1636 his sermons and Sunday afternoon lectures in Trinity Church brought him fame. He continued his addresses in the University for twenty years and so created the real climate of opinion in which Platonism could flourish. His personal influence and point of view are indicated by the fact that Cromwell consulted him over religious toleration for the Jews. He wrote nothing for publication and his *Sermons* were not printed until midway through the eighteenth century. How much he anticipated the Age of Reason in them! In a sermon on 'The Work of Reason' he said this:

'If I be God's creature . . . I am naturally and unavoidably under an obligation of Duty and Affection to him; and I am bound to serve him, honour, and live in regard of him. Here is the Reason of the Thing; and the Reason of your Mind is to find it out; which a Beast cannot do; therefore is incapable of Religion. But this is what you are to do; and there is no Religion but in this. I say, if so be a Man doth not admit what he receives, with satisfaction to the Reason of his Mind; he doth not receive it as an intelligent Agent, but he receives it as a Vessel receives Water; he is *continens* rather than *recipiens*.'¹

Whichcote preached sobriety of thought, and religion as the supreme rationality 'in opposition to the fanatic enthusiasm and senseless canting' of the times. The quality of his toleration, and the epigrammatic nature of his style, emerge from this aphorism: 'Religion is not a Hearsay, a Presumption, a Supposition; it is not a customary Pretension and Profession; it is not an Affectation of any Mode; it is not a Piety of particular Fancy, consisting in some pathetic Devotions, vehement Expressions, bodily Severities, affected Anomalies, and Aversions from the innocent Usages of others; but consisteth in a profound Humility and an universal Charity.'²

Yet his brilliant Cambridge tutor and friend, Antony Tuckney, expressed the uneasiness of many when he wrote to Whichcote to remonstrate against the 'Platonising' of the University dons. They

¹ *The Cambridge Platonists: selections from the writings of Benjamin Whichcote, John Smith and Nathaniel Culverwell*. Intro. by E. T. Campagnac, Oxford, 1901, p. 53.

² *Ibid.*, p. 71.

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were, he thought, 'very learned and ingenious men', some of whom certainly read much more of Plato than they did of their scriptures. And though he finds them full of 'excellent and divine expressions' surprising as gems discovered on dunghills, he is compelled to protest against the vein of their doctrine. In it he finds 'The power of nature in morals too much advanced. Reason hath too much given to it in the mysteries of faith. . . . Mind and understanding is all; heart and will little spoken of. . . . A kind of moral divinity minted, only with a little tincture of Christ added. Nay, a Platonic faith unites to God. . . . This was not Paul's manner of preaching.'¹

One of the 'very learned and ingenious men' whom Tuckney mistrusted was Dr. Henry More. More came from Grantham, where Newton had been educated. His family was Calvinist, but he revolted for he 'could never swallow that hard doctrine'. He became a fellow of Christ's College, Cambridge, and a friend of the redoubtable Lady Conway, at whose country seat in Ragley, Warwickshire, he spent much of his time. In later years he took part there in spiritualist activities. He dedicates *Immortality of the Soul* to Edward, Viscount Conway, and expresses gratitude for 'that pleasant retirement I enjoyed at Ragley during my abode with your Lordship; my civil treatment there, from that perfect and unexceptionable pattern of a truly Noble and Christian matron, the Right Honourable your Mother.' And of the 'honour and pleasures of reading Descartes with your Lordship in the Garden of Luxembourg to pass away the time'. A pleasant picture of the leisured and cultivated scholar is imprinted on this and his other writings. His most important works are *Divine Dialogues* (1668), *The Immortality of the Soul so farre forth as it is demonstrable from the knowledge of Nature and the Light of Reason* (1659) and *Antidote against Atheism* (1653).

Immortality of the Soul is, for the most part, a continuous and logical argument to demonstrate the existence of incorporeal substance, and so of the soul, and so, therefore, of its incorruptibility. In essence it is a reply to the materialism of the *Leviathan* of which More quotes important passages in order to repudiate them. The Universe, Hobbes declared, is an aggregate of bodies, and there is no real part of it which is not a body: nor is there any kind of body

¹ Thomas Traherne, G. I. Wade, Princeton, 1944, p. 226.

which is not a part of the Universe. And body, he roundly declares, is that which occupies space, and is not simply a product of the imagination. Bodies, however, are subject to change, which means that to a living creature they present a variety of appearances. These appearances we call accidents: that to which the accidents happen we call *Substance*. If therefore Body and Substance 'signifie the same thing; and thereof Substance incorporeal are words which when they are joyned together destroy one another, [it is] as if a man should say an Incorporeal Body.'

But to this More has a ready answer. Body, he argues, is a substance which is impenetrable, but discerptible: that is to say that the fundamental particles cannot be penetrated, but so far down as them at least, matter can be torn into pieces and reassembled in new forms or patterns. But impenetrable matter, about which only the accidents are truly known, is quite as mysterious an entity as spirit. Why if God chose to create impenetrable and discerptible substance should He not also produce, if He wills, its opposite—*penetrable*, but *indiscerptible* substance, which in fact is what spirit is? Spirit can be entered, and it can enter: it can flood the universe through: but we cannot do to it what we can do to matter, break it into small pieces. For pieces or particles belong to the nature of corporeal substances, but not to spirit. But that does not mean to say we can get hold of the pieces and learn something about matter, while knowledge of spirit is denied to us. There is plenty of evidence for spiritual things—the Deity, the souls of men and brutes, and seminal forms, or entelechies, are all manifestly incorporeal substances.

How, he asks, does senseless matter come to have motion? If matter is sometimes at rest, and at other times in activity, where do the particles of matter get their power to change from one state to another. From themselves? As an inherent compulsion? But then if that's the case how comes it that they can decide sometimes to exercise that power and at other times to refrain? More argues that matter is utterly devoid of motion in itself, and that this is a further proof of the existence of incorporeal substance. For *something* must move matter: but it is the nature of spirit to be self-moving—Occam's argument—and to move our own bodies. If it does not exercise a directive influence over corporeal substances, what does? The necessity for incorporeal substance is therefore proved.

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Then—how are beings formed? If we are to think of creatures as formed out of atoms, without the intervention of any directing principle, how comes this miracle about? Is it possible even if atoms are granted sense? 'Now let us give these busie active particles of Matter that play up and down everywhere the advantage of Sense, and let us see if all their heads laid together can contrive the Anatomical Fabrick of any Creature that lives. Assuredly when all is summ'd up that can be imagined, they will fall short of their account. For I demand, has every one of these particles that must have an hand in the framing of the Body of an Animal, the whole design of the work by impress of some Phantasme upon it, or, as they have severall offices, so have they severall parts of the design? If the first, it being most certain, even according to their opinion whom we oppose, that there can be no knowledge nor perception in the Matter, but what arises out of the Reaction of one part against another, how is it conceivable that any one particle of Matter or many together . . . can have the Idea impressed of that Creature they are to frame? Or if one or some few particles have the sense of one part of the Animall . . . and other some few of other parts; how can they confer notes? by what language or speech can they communicate their counsell one to another?'¹

And then Henry More raises the problem which has much troubled psychologists and philosophers to this day: how does it happen that if 'sense [is] nothing but the impress of corporeall motion from Objects without' we do not appear to register the corporeal bombardment, but on the contrary receive a distinct impression of different objects situated in space, each one a whole, exhibiting qualities of colour, texture, motion and the like. And that we not only do this through one sense, vision, but we amalgamate the impressions of several senses, we unite the bombardment of light waves upon the eye with sound waves to the ears, or direct touch to the skin, to produce one homogeneous picture of external reality. There must be a *common sensorium*, More argues, to which all impressions are passed, which forges out of them a picture of reality. More discusses the possible seat of this sensorium and decides that it must be in the 'fourth ventricle' of the brain. This, he asserts, is the seat of the rarefied animal spirits which the soul

¹ *The Immortality of the Soul*, London, 1659, pp. 86-87.

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utilizes for its command of the body. He rejects the Cartesian notion of the pineal gland as the seat of the soul.

Yet a further line of attack upon Hobbes was that which More directed against that philosopher's concept of perception. If such things as sense and perception are the result of motions of matter, 'it will necessarily follow, that where ever there is *Motion*, especially any considerable duration thereof, there must be *Sense* and *Perception*. . . . In brief, if any Matter have *Sense*, it will follow that upon *Reaction* all shall have the like, and that a Bell while it is ringing, and a Bow while it is bent, and every Jack-in-the-box that Schoolboys play with . . . shall be living Animals, or Sensitive Creatures. . . . And indeed Mr. Hobbs himself, though he resolve *Sense* merely into a *Reaction* of Matter, yet is ashamed of these odd consequences . . . and is very loth to be reckoned in the company of those Philosophers . . . who have maintained that all Bodies are endued with *Sense*.'¹

What, however, of the positive aspect of More's philosophy? It is to begin with dualist, not simply in the platonistic sense of an impermanent material world on the one hand, and eternal ideas which are a key to that world, on the other, but rather it conceives of a world of two distinct substances of quite opposite characteristics which, in the Cartesian sense, nevertheless manage to interact. *How do they interact?* Or, as More puts it, *how do pre-existent souls enter into union with terrestrial bodies?* He tells us 'The Platonists doe chiefly take notice of Three kindes of Vehicles, Aethereal, Aereal, and Terrestrial'. And while an aerial or aethereal vehicle of the soul constitutes no great difficulty to his imagination, the union of a soul with *matter* does:

'For what can be the cause of this cohesion, the very essence of the Soul being so easily penetrative of Matter, and the dimensions of all Matter being alike penetrable everywhere? For there being no more *Body* or *Matter* in a Vessel filled with *Lead* than when it is full of *Water*, nor when full of *Water* than when with *Aire*, or what other subtler body soever that can be imagined in the Universe; it is manifest that the *Crassities* of Matter is everywhere alike, and alike penetrable and passable to the Soul. And therefore it is unconceivable how her Union should be so with any of it, as that she

¹ *Ibid.*, pp. 124-5.

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should not be able at any time to slide freely from one part thereof to another as she pleases. It is plain therefore, that this Union of the Soul with Matter does not arise from any such gross Mechanical way, as when two bodies stick one in another by reason of any toughness and viscosity, or straight commissure of parts: but from a *congruity* of another nature, which I know not better how to term than *Vital*: which *Vital Congruity* is chiefly in the Soul itself, it being the noblest Principle of Life; but it is also in the Matter, and there is nothing but such modification thereof as fits the *Plastick* part of the Soul, and tempts out that Faculty into act. Not that there is any *Life* in the *Matter* with which this in the Soul should sympathize and unite; but it is termed *Vital* because it makes the *Matter* a congruous Subject for the Soul to reside in, and exercise the functions of life.¹ As, he argues, pleasure is to the perceptive part of the soul, so congruity of Matter is to the plastick. To put it shortly, the pre-existent soul takes up and cleaves to that matter which it can take delight in forming and directing according to that creative (plastick) principle it strives, as the instrument of the Divine, to exercise. But he will not have it that the soul principle which works among material objects is the *world soul*, or a ray of it. Just as there is an infinitude of material objects, so there is an infinitude of immaterial essences or spiritual beings.

One cannot regard More's arguments about soul-body union either in *Immortality* or *Antidote against Atheism* as established even to his own satisfaction. But his work did open out most vigorously to the inspection of his times those subtle and indefinable aspects of life and thought which could not be reduced to the terms of an unyielding Hobbesian atomism. The later parts of *Immortality* degenerate, at least according to a modern view, for they become increasingly concerned with the 'signatures' of spiritual forces on matter, of such nature as could be held to establish the immortality of the soul. We learn of such wonders as the effect on a witch in bed of the dismemberment of her familiar, of a headless eagle which flew over a barn, and the severed head of a malefactor which bit a dog in the ear, and of the spectres and demons which appeared to the ancients. Yet one has to admit that, though More fails to subject all this kitchen-maid evidence to very critical examination, his argu-

¹ *Ibid.*, pp. 262-3.

ment is logical enough. If the universe consists of two substances, one corporeal and the other incorporeal, but both occupying space, then it is reasonable to search for manifestations of the incorporeal, and to find them in signs and wonders, that is in those things not native to the corporeal natural world. That leads one to make the almost inevitable criticism that More's platonism is deeply infected with the materialism of his times. His God is space. His spiritual world is not so much an immaterial world or an Ideal world, as a world of matter made airy and invisible. He feels able to establish its existence by much the same kind of argument or proof one directs to the investigation of material substances. His spirit, in fact, is matter stood upon its head. And the suspicion that the Platonists were deeply infected by the theory they were seeking to overthrow was very generally expressed about the works of Ralph Cudworth, whom we now must consider.

Ralph Cudworth (1617-1688), son of a Somerset rector, was sent to Emmanuel College, Cambridge, and was elected Fellow there in 1639. His first book, *A Discourse concerning the true Notion of the Lord's Supper*, was published in 1642. A few years later he was appointed Master of Clare Hall and Regius Professor in Hebrew. He was a supporter of the Commonwealth and preached before the House of Commons in March 1647, on the principles of charity and toleration, much in the spirit of Whichcote. He was a friend of John Thurloe, Secretary of State both to Oliver Cromwell and his son Richard. Nevertheless upon the restoration of Charles II he made his peace with the new regime in the form of congratulatory verses addressed to the King. A year or two later he was presented with the living of Ashwell, Herts, and in 1678 became Prebendary of Gloucester. A man of prodigious learning, he had long been one of the moving spirits of the new Platonism and in 1678 published the first part of *The True Intellectual System of the Universe wherein all the Reason and Philosophy of Atheism is confuted and its impossibility demonstrated*. No second part was published, and of his manuscript writings some remain unpublished to this day. His failure to proceed was probably due to the agitation against *The True Intellectual System* raised in theological circles. The courtiers of Charles II disliked the book and there were many attacks on it in print. A Protestant divine, Mr. John Turner, in his *Discourse on the Messiah* said:

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'We must conclude Dr. Cudworth to be himself Tritheistic, a sect for which I believe he may have some kindness, because he loves hard words; or something else without stick or trick, which I will not name, because his book pretends to be written against it.' And Dryden too, said that Cudworth 'has raised such strong objections against the being of God and Providence, that many thinks he has not answered them'. The Earl of Shaftesbury was more understanding, saying in his *Moralists*: 'You know the common fate of those who dare to appear fair authors. What was that pious and learned man's case, who wrote the Intellectual System of the Universe? I confess it was pleasant enough to consider, that though the whole world were no less satisfied with his capacity and learning, than with his sincerity in the cause of the Deity, yet was he accused of giving the upper hand to the Atheists, for having only stated their reasons and those of their adversaries fairly together.'¹

The True Intellectual System is a long and pedantic book. There is too much indiscriminate learning in it. Nevertheless its earnestness and cogency cannot be denied and the wrath Cudworth raised was not indeed on account of its superfluity of scholarship, but because the case for the atomical atheists, ancient and modern, had never been stated (even by its authors) so eloquently. Indeed, among other things, his explanation of nominalism is so cogent that it reads more like a defence than an attack.² We have more than a suspicion that he was half-way to a nominalist when we read in *Eternal and Immutable Morality* that the notion that the constitutive essences of all individual created things could exist apart from the things themselves was 'an absurd conceit [which] Aristotle frequently, and no less deservedly chastises'.³ The eternal and immutable essences, he said, are to be understood only as 'they are the objects of the mind'.

Certainly Cudworth accepted the empirical theory of sensation, and much of the theory of mechanism advanced by Hobbes, as this remarkable passage shows:

'And now this atomical physiology of the ancients seems to have

¹ Cf. the 'Memoir of Thomas Birch' in the 1845 edition of Cudworth's *True Intellectual System*, Vol. I, pp. xvi-xvii.

² Cf. *True Intellectual System*, 1845 edn., Bk. I, Chap. 2, par viii (Vol. I, p. 114 *et seq.*).

³ Op. cit., Bk. IV, Chap. VI, par. 2. ('Treatise concerning Eternal and Immutable Morality' concludes Vol. III of the 1845 edn. of *True Intellectual System* and this reference will be found on p. 640.)

two advantages or pre-eminentances belonging to it, the first whereof is this, that it renders the corporeal world intelligible to us; since mechanism is a thing that we can clearly understand, and we cannot clearly and distinctly conceive any thing in bodies else. To say this or that is done by a form or quality, is nothing else but to say, that it is done we know not how; or, which is yet more absurd, to make our very ignorance of the cause, disguised under these forms and qualities, to be itself the cause of the effect.

'Moreover, hot and cold, red and green, bitter and sweet, etc. formally considered, may be clearly conceived by us as different fancies and vital passions in us, occasioned by different motions made from the object without upon our nerves; but they can never be clearly understood as absolute qualities in the bodies themselves, really distinct from their mechanical dispositions; nor is there indeed any more reason, why they should be thought such, than that, when a man is pricked with a pin or wounded with a sword, the pain he feels should be thought to be an absolute quality in the pin or the sword.'¹

Yet his intention was not to support scepticism or materialism, but to demonstrate that, if sense was so unreliable, and we are to know anything at all 'it plainly follows, that there is something in us superior to sense, which judges of it, detects its fantasy, and condemns its imposture, and determines what really is and is not, in bodies without us'. This power 'must needs be a higher self-active vigour of the mind' which plainly cannot be material in origin or nature.²

Nevertheless this far from orthodox Platonist demonstrates more clearly than anyone before him the exact differences between the various atomic hypotheses. 'Our ancient Atomists never went about, as blundering Democritus afterwards did, to build up a world out of mere passive bulk, and sluggish matter, without any . . . active principles, or incorporeal powers; understanding well, that thus they could not have so much as motion, mechanism, or generation in it; the original of all that motion that is in bodies springing from something that is not body, that is, from incorporeal substance. And yet if local motion could have been supposed to have

¹ *True Intellectual System*, Bk. I, Chap. I, par. xxxix (Vol. I, pp. 85-86).

² *Ibid.*, Bk. I, Chap. I, par. xxxviii (Vol. I, p. 85).

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risen up, or sprung in upon this dead lump and mass of matter, nobody knows how, and without dependence upon any incorporeal being, to have actuated it fortuitously; these ancient Atomists would still have thought it impossible for the corporeal world itself to be made up, such as it is now, by fortuitous mechanism, without the guidance of any higher principle. But they would have concluded it the greatest of impudence or madness, for men to assert, that animals also consisted of mere mechanism; or, that life and sense, reason and understanding, were really nothing else but local motion, and consequently that themselves were but machines and automata. Wherefore they joined both active and passive principles together, the corporeal and incorporeal nature, mechanism and life, atomology and pneumatology; and from both these united, they made up one entire system of philosophy, correspondent with, and agreeable to, the true and real world without them.¹

Atomic philosophy frequently led to this dualism, Cudworth demonstrated. But there was yet another form which did not accept the existence of dead matter on the one hand and living principle on the other. This form he calls hylozoism: it holds that all matter is endowed with a plastical faculty which gives it the power to organize. Neither Atomism nor Hylozoism, Cudworth recognized, implies atheism. Indeed the atomism of the ancient was not atheistic, but was allied to theology. But he asserts that the tendency of hylozoism to plant in every particle of matter the organizing and active principles which men otherwise describe in non-material terms (as *vital* or *spiritual*), leads the hylozoists to regard the Deity as an unnecessary intrusion into a self-ordering universe.

Certainly Cudworth shared with Henry More the notion of a 'plastick Nature'—a creative or generating principle acting almost magically upon matter from within, not without, but as an inferior and subordinate instrument of God undertaking for Him the drudgery of the endless generation of things.² This theory of the Platonists greatly influenced contemporary naturalists like John Ray (*Wisdom of God in the Works of Creation*, 1691) and kept a sort of *vitalism* philosophically alive during the century of the ascendancy of Newtonian theories.

¹ *Ibid.*, Bk. I, Chap. I, par. xli (Vol. I, p. 90).

² *Ibid.*, (Vol. I, Digression, p. 280-1).

Cudworth was most truly Platonist when he came to define the nature of God in the face of what he labelled 'atheistical sottishness'. God is not to be thought of as the ground of senseless matter from which all things have sprung, but on the contrary that highest conscious and intelligent principle, or Being, of which we can think. The universe is explained by the highest in it, not the lowest. God is a Being absolutely perfect, with perfect knowledge and understanding; omni-causal and omnipotent, that is, having infinite power. And this definition of the Deity, he shows, is not far from that of Plato 'who makes the highest perfection, and supreme Deity, to be goodness itself, above knowledge and intellect'. God must not be understood as indulgence: he is not soft or fond love but an impartial law, and the measure of all things.

As to the undeniable presence of moral evil in the world—how can it derive from the good and august Creator? Cudworth explains that it is necessary—given the kind of universe we have—that there should be higher and lower inclinations in creatures and that they should have freedom of choice as to which to follow: and that the same power which makes them capable of praise and reward, should also expose them to pain and punishment: that there should be, in fact, a capacity for suffering if there is to be a taste for pleasure. In other words, man cannot have it one way only: he cannot be a sentient and freely choosing being oriented *only* towards the good and the perfect. If there are to be 'natural generations' in the world must there not be also dissolutions and corruptions, with the suffering they impose? 'To all which may be added, according to the opinion of many, that there is a kind of necessity of some evils in the world for a condiment (as it were) to give relish and *haut-goust* to good; since the nature of imperfect animals is such, that they are apt to have but a dull and sluggish sense, a flat and insipid taste of good, unless it be quickened and stimulated, heightened and invigorated, by being compared with the contrary evil.'¹

In *Treatise concerning Eternal and Immutable Morality* (not published until 1731) Cudworth answered the Hobbesian theory that morality is the creation of the state with a more resounding Platonism than is to be found in *True Intellectual System*. There is, he avouched, despite some ambiguity over the meaning of 'essences',

¹ *Ibid.*, Bk. IV, Chap. I, par. xiii (Vol. I, p. 345).

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indubitably an eternal mind or intellect 'which comprehends within itself the steady and immutable rationes of all things and their verities, from which all particular intellects are derived, and on which they depend'. The soul, so derived from the eternal mind, is not a *tabula rasa*, with no innate furniture, and nothing in it save what is impressed upon it from without, but it has an 'inward and vital principle' or natural determination 'to do some things and avoid others'. Moral good and evil have certain real natures 'which are the actions or souls of men . . . neither alterable by mere will or opinion'.

A moral nature, that is to say, is as much a part of the human constitution as the emotional or physical nature of man. What is more, it is a primary not a secondary part. Honesty and morality are not epiphenomenal, 'airy and fantastical things, that have little or no entity or reality in them besides sensuality': they *precede*, as it were, the less natures of man. Following Plato, Cudworth shows that men tend to argue that all *real* things are made by blind chance, by the fortuitous assembly of atoms, and that ethics, politics, morality and law are *artificial*, secondary things, dependent upon these primary but fortuitous 'real' things. But since mind and soul command, govern and rule nature, men should argue the opposite, that these principles are antecedent to matter and body. 'For since mind and intellect are a higher, more real and substantial thing than senseless body and matter, and what hath far more vigour, activity and entity in it, modifications of mind and intellect, such as justice and morality, must of necessity be more real and substantial things, than the modifications of mere senseless matter, such as hard and soft, thick and thin, hot and cold, and the like are.'¹

The primacy of the intellectual and moral, which can be demonstrated, depends upon the existence of God. Without God, without an author of all things, 'whose nature is the first rule and exemplar of morality', there is no morality. 'Now there can be no such thing as God, if stupid and senseless matter be the first original of all things; and if all being and perfection that is found in the world, may spring up and arise out of the dark womb of unthinking matter; but if knowledge and understanding, if soul, mind, and wisdom may result and emerge out of it, then doubtless every thing that appears

¹ Op. cit., Bk. IV, Chap. VI, par. 8. (Vol. III, p. 643).

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in the world may; and so night, matter, and chaos must needs be the first and only original of things.¹

In the doctrine that there is no moral relativism is to be found the heart of the Cambridge Platonism. The assertion made by all the Platonists that there are eternal verities which have existed through all time and cannot be destroyed was much more than a defence of Christian morality against the atomism and relativism of Hobbes. It was a defence, too, of the rational basis of science and philosophy. For if morals were the by-product of a particular arrangement of matter, or particular doses of pleasure or pain, then the same might be said also of knowledge of any other kind. Change the material arrangement or the sensual dosage and other and as credible theories might emerge. No, the Platonists asserted, along that path lay chaos. It had to be asserted that there was one perfect Mind, the source of all values, moral and intellectual. 'It is evident', Cudworth wrote, 'that wisdom, knowledge and understanding are eternal and self-subsistent things, superior to matter and all sensible beings, and independent upon them.'

Perhaps, among all the Platonists it was the most obscure one, Thomas Traherne, author of *Christian Ethics* and the *Centuries of Meditation*, works lost for centuries and rediscovered only in our own day, who had the happiest things to say about the Hobbesian world of atoms in motion, or the Newtonian universe of planets swimming in divine orbits round their several suns: it was this:

'You never know yourself till you know more than your body. The Image of God was not seated in the features of your face, but in the lineaments of your Soul. In the knowledge of your Powers, Inclinations, and Principles, the knowledge of yourself chiefly consisteth. Which are so great that even to the most learned of men, their Greatness is Incredible; and so Divine, that they are infinite in value. Alas the World is but a little centre in comparison of you. Suppose it millions of miles from the Earth to the Heavens, and millions and millions above the Stars, both here and over the heads of our Antipodes: it is surrounded with infinite and eternal space: And like a gentleman's house to one that is travelling; it is a long time before you come unto it, you pass it in an instant, and leave it for ever. The Omnipresence and Eternity of God are your fellows'

¹ *Ibid.*, Bk. IV, Chap. VI, par. 13 (*True Intellectual System*, Vol. III, p. 645).

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and companions. And all that is in them ought to be made your familiar Treasures. Your understanding comprehends the World like the dust of a balance, measures Heavens with a span, and esteems a thousand years but as one day. So that Great, Endless, Eternal Delights are only fit to be its enjoyments.¹ But then, one must be a poet rather than a philosopher to write like that.

¹ *Centuries of Meditations*, London, 1908, Meditation 19.

CHAPTER FIVE

The Founder of Empiricism

JOHN LOCKE (1632-1714)

When, on January 30th 1649, Charles I stepped to his execution on a scaffold erected outside the Banqueting Hall in Whitehall, a thoughtful youth of sixteen from nearby Westminster School may have been among the crowd which watched a king's head fall. Certainly as a scholar living within a stone's throw of the place of execution he could not have escaped the horror of that day. The name of this lad was John Locke. Forty years later we find the same John Locke returning to England from political exile in the ship which brought Princess Mary to the throne of England. By then England had passed through nearly seventy years of bitter political struggles, and it is against the background of them that John Locke's life and writings must be judged.

In *Leviathan*, Thomas Hobbes argued that men are bound to one another in any society or 'Commonwealth'—which he called an 'artificial animal'—by fear. In a state of nature men are so constantly at war with one another that they gladly surrender their natural freedom for life in a society which guarantees them some safety. But this covenant they make to live in society cannot be undone. And so it followed that 'they that are subjects to a monarch, cannot without his leave cast off monarchy, and return to the confusion of a disunited multitude; nor transfer their person from him that beareth it, to another man.'¹ Nor could the sovereign submit to any diminution of his power: 'If the essential rights of sovereignty . . . be taken away, the commonwealth is thereby dissolved and every

¹ *Leviathan*, Pt. 2, Chap. XVIII, par. 1 (p. 113).

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man returneth into the condition, and calamity of a war with every other man, which is the greatest evil which can happen in this life.¹

So it followed logically for Hobbes that the actions of the sovereign could not be challenged by his subjects, nor could he be punished or put to death by them. At its most gentle, this was a justification of paternalism: at its extreme, an argument for absolutism, as we have seen. It certainly could not be permitted to go unchallenged in an age when Englishmen were proud, fiery and eloquent defenders of liberty. If their temper in that age, which twice in one century made them chase a king from his throne, is to be understood, the voice of John Milton must also be heard. Eight years before the publication of *Leviathan* he wrote that never-to-be forgotten plea for liberty of speech and printing called *Areopagitica*. Give us, he cried, the liberty to know, to utter, and to argue freely according to conscience, above all liberties:

'Lords and Commons of England, consider what Nation it is whereof ye are, and whereof ye are the governors: a Nation not slow and dull, but of quick, ingenious and piercing spirit, acute to invent, subtle and sinewy to discourse, not beneath the reach of any point, the highest that human capacity can soar to. . . . Should ye suppress all this flowery crop of knowledge and new light sprung up and yet springing up daily in this city? Should ye set an oligarchy of twenty engrossers over it, to bring a famine upon our minds again, when we shall know nothing but what is measured to us by their bushel? Believe it, Lords and Commons, they who counsel ye to such a suppressing do as good as bid ye suppress yourselves. . . .'²

England was not a nation of Hobbists, and one of the most famous and formidable answers to Thomas Hobbes came from the pen of John Locke. He became the apostle of law, liberty and constitutionalism in opposition to political excesses on every side. Even the title of his first published political work is significant: it is called *Essay on Toleration*. His most influential political work, *Two Treatises of Civil Government* (1690), was not published until some forty years after *Leviathan*: nevertheless it constituted strictly an

¹ *Ibid.*, Pt. 2, Chap. XXX, par. 3 (p. 219).

² *Areopagitica and other Prose Works* (Everyman edn., pp. 31, 35).

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answer to the ideas set in motion by Thomas Hobbes. Locke based his study upon two conceptions which were to dominate the age of Enlightenment which followed him: they were, first, that in a state of nature man is a free, sovereign being, and, secondly, that he is gifted with Reason by his Maker so that he may understand his life and order it properly. Why does such a sovereign being join with others in a commonwealth?

'If man in a state of Nature be so free as has been said, if he be absolute lord of his own person and possessions, equal to the greatest and subject to nobody, why will he part with his freedom, his empire, and subject himself to the dominion and control of any other power? To which it is obvious to answer, that though in a state of Nature he hath such a right, yet the enjoyment of it is very uncertain and constantly exposed to the invasion of others; for all being kings as much as he, every man his equal, and the greater part no strict observers of equity and justice, the enjoyment of the property he has in this state is very unsafe, very insecure. This makes him willing to quit this condition which, however free, is full of fears and continual dangers; and it is not without reason that he seeks out and is willing to join in society with others who are already united, or have a mind to unite for the mutual preservation of their lives, liberties and estates, which I call by the general name—property.'¹

This justification of the Social Contract is so strikingly close to Hobbes' that it reveals more than anything else could how strictly Hobbes had marked out the field of political debate for his century. But John Locke does not go on to argue that the sovereign power created by the formation of a Commonwealth is one which cannot be checked by the common people. On the contrary, to place themselves in an arbitrary, absolute power 'were to put themselves into a worse condition than the state of Nature'. In giving 'themselves up to the absolute arbitrary power and will of a legislator, they have disarmed themselves, and armed him to make a prey of them when he pleases; he being in a much worse condition that is exposed to the arbitrary power of one man who has the command of a hundred thousand than he that is exposed to the arbitrary power of a hundred thousand single men, nobody being secure, that his will who

¹ *Two Treatises of Civil Government*, Bk. II, Chap. 9, par. 123 (Everyman edn., p. 179).

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has such a command is better than that of other men, though his force be a hundred thousand times stronger'.¹

Therefore, Locke insists, all supreme power must itself govern 'by declared and received laws, and not by extemporary dictates and undetermined resolutions'. And it follows that under such laws the supreme power would not have the arbitrary right to deprive any man of his life, liberty or property. The power entrusted to the legislature cannot be passed on to anyone else. Sovereignty resides with the people, and it is they alone who can decide to change its form or to appoint new governors. The government is a party to the social contract and if it fails to keep its side of the bargain may be resisted. Locke was reluctant to venture too far into the difficult field of revolutionary theory; but he was prepared to admit that force might be used as an answer to unjust force, though only then. In Benthamite manner he declared that the end of government is the good of mankind; and is it better that the people should be continually exposed to the 'boundless will of tyranny' or that the rulers themselves, if they misuse their power and employ it for the destruction of 'the properties of their people', should be themselves opposed? 'When a king has dethroned himself, and put himself in a state of war with his people, what shall hinder them from prosecuting him who is no king, as they would any other man, who has put himself in a state of war with them?'²

Yet these inevitable judgments on the side of the rights of popular sovereignty apart, what emerges in the political philosophy of John Locke is the movement of English thought towards *constitutionalism*. The revolution which had brought King Charles I to the scaffold had led to a military tyranny far worse than any the country had endured under the Stuart kings. The Restoration of the monarchy, intended to be as much as anything else a revival of popular liberties and parliamentary rule, produced in its turn yet another tyranny. What was to be done to check the excesses and insolences of princes and parliaments? The outstanding need of Locke's day was for a code of laws establishing the rights of citizens, and the power of kings and parliaments, so that irresponsible power could be held in check. Locke, so great a lover of toleration

¹ *Ibid.*, Bk. II, Chap. 2, par. 137 (pp. 186-7).

² *Ibid.*, Bk. II, Chap. 19, par. 239 (p. 240).

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and liberty, was the spokesman of that feeling, and his political philosophy became the dominant one. When the English Parliament, after the abdication of James II, called William of Orange and Princess Mary to the throne, they read to them, in that same Banqueting Hall in Whitehall from which Charles I had stepped to his death, a cautionary lecture called a Declaration of Rights, but which was more a recital of popular rights against the sovereign than anything else. The Declaration became the Bill of Rights and ended as 'An Act declaring the Rights and Liberties of the Subject, and settling the Succession of the Crown' (1689) which is still the basis of British political liberties. The ideas of the Bill of Rights, and the very phrases of John Locke, its inspirer, found their way into the American Declaration of Independence. Locke and Jefferson are in fact the fathers of the libertarian constitution of the United States. It was in the year following the Declaration of Rights that the *Treatises of Civil Government* was published with the declared political aim of 'establishing the throne of our great restorer, the present King William [and], to make good his title in the consent of the people'.

It is time to say something of the life of John Locke before we pass to consideration of his greatest work. He was born in 1632, in Somerset, at a time when the Protestant character of England was being assailed by the King and his bishops, and men were quitting our shores in their thousands to found free communities in America. His father was a country lawyer who so hated the collection of the tax called 'ship money' in his parish that he joined the opposition to the king and, when the Civil War opened, led a regiment of volunteers on the Parliament side. At twelve John Locke entered Westminster School and went on to Oxford when he was nineteen. He did not greatly care for the academic atmosphere of Oxford, which was still the home of scholasticism, but received nevertheless a university appointment, a permanent studentship, of which he was later deprived for political reasons—stupidities of this kind were all too common in that age—and lectured in Greek, rhetoric and philosophy. To the reading and exposition of Descartes' radical philosophy, which made so clean a break with scholasticism, he turned with enjoyment. We find him, however, unable to think of philosophy as a career because of the attitude prevailing at the uni-

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versities, and turning to medicine, and entering into close friendship with the advanced scientific minds of his century.

In his thirties he formed a close friendship with Lord Ashley, afterwards 1st Earl of Shaftesbury, one of the most influential statesmen of the century, and one of the most abused, who was forced at the end of his life to flee the country. Shaftesbury was the 'false Achitopel' of John Dryden's savage satire 'Absalom and Achitopel', who by his 'pernicious hate/Had turned the plot to ruin Church and State'. Locke lived with Shaftesbury, as physician to his household, and tutor to his little grandson, who was brought up according to Locke's *Thoughts Concerning Education*. The young Anthony benefited enough from Locke's wisdom to become in his own good time an important opponent of the egotistic doctrines of Hobbes and a philosopher of some standing. Locke played a part in the advancement of science and became a member of the Royal Society and a friend of Isaac Newton, its president. He corresponded with him about many things, including the alchemical problems of transmuting base metals into gold, but not all their correspondence was harmonious, as this letter shows:

'Sir,

Being of the opinion that you endeavoured to embroil me with women and other means, I was so much affected with it, as that when one told me you were sickly and would not live, I answered 'twere better if you were dead. I desire you to forgive this uncharitableness. For I am now satisfied that what you have done is just, and I beg your pardon for my having hard thoughts of you for it, and for representing that you struck at the root of morality, in a principle you laid down in your Book of Ideas, and designed to pursue in another book, and that I took you for a Hobbit. I beg your pardon also for saying or thinking that there was a design to sell me an office, or to embroil me.

I am your most humble and unfortunate servant,

Is. NEWTON.

At the Bull, in Shoreditch, London, Sept. 16th 1693.¹

Certainly Locke's health was not good. Sir Godfrey Kneller's well-known portrait of him reveals him as a valetudinarian. His

¹ *Life and Letters of John Locke* by Lord King (1884 edn., p. 226).

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friend and biographer Le Clerc said of him that his weak state of health was an inconvenience rather than a disablement and that apart from drinking nothing but water he could eat what he liked, and could read by candlelight without spectacles to the end of his life.

Bad health made him travel in search of better, and he was in France when the teaching of Descartes was banned in schools and universities, and notes the fact in his journal. In France he met many philosophers, including Malebranche, and talked with them, and afterwards at Rotterdam, too, was part of an intellectual circle. The travels of Voltaire in England, and his *Lettres sur Les Anglais*, made known to French thinkers the genius of Locke; and so it came about that his influence upon Rousseau and so upon the French Revolution was as profound as that upon the American Revolution.

Locke died at the age of seventy-four, just surviving into the century his philosophy did so much to shape. His end was a peaceful one: almost his last act was to listen to the reading of the Psalms; he told his lifelong friend Lady Masham, at his going, that 'he thanked God he had passed a happy life, but now that he found that all was vanity, and exhorted her to consider this world only as a preparation for a better state hereafter'.

His real vogue as a philosopher came only with his return to England after the abdication of James II: it was only then that his books were published, and he was already fifty-seven. He had been at work on his immense study, *Essay Concerning Human Understanding*, for twenty years, and in the Preface to it he tells us how essentially accidental in origin it was:

'Were it fit to trouble thee with the history of this Essay, I should tell thee, that five or six friends meeting at my chamber and discoursing on a subject very remote from this, found themselves quickly at a stand, by the difficulties that rose on every side. After we had awhile puzzled ourselves, without coming any nearer a resolution of those doubts which perplexed us, it came into my thoughts that we took a wrong course; and that before we set ourselves upon enquiries of that nature, it was necessary to examine our own abilities, and see what *objects* our understanding were, or were not, fitted to deal with. This I proposed to the company, who all readily assented; and thereupon it was agreed that this should

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be our first enquiry. Some hasty and undigested thoughts, on a subject I had never before considered, which I set down against our next meeting, gave the first entrance to this Discourse; which having been thus begun by chance, was continued by entreaty; written by incoherent parcels; and after long intervals of neglect, resumed again, as my humour or occasions permitted; and at last, in a retirement where an attendance on my health gave me leisure, it was brought into that order thou now seest it.¹

It cannot be too strongly emphasized that Locke's *Essay Concerning Human Understanding* arose out of the scientific tendencies of the age. The English empiricism of which he was the founder and in some ways the greatest exponent was the philosophical aspect of that critical and empirical science of his time for which Newton had formulated the rules. In the light of this discipline we can understand why it was that Locke proposed simply to enquire, as a modern psychologist might, how men come by the ideas they discover to be present in their minds. Since he wanted to strip this enquiry down to the simplest elements and propositions, he began with a critical examination of innate ideas. If there are ideas innate in the mind, placed there by gift at the mind's birth, and not derived from experience, the whole idea-making process would immediately become complicated in the manner condemned by the new science—it would be halted by the presence of imponderable elements. But as Locke can find no evidence that ideas arise from any other source but experience, he decides that the notion of innate ideas, including innate moral principles, must be abandoned.

'It would be sufficient to convince unprejudiced readers of the falseness of this supposition [of innate ideas], if I could show . . . how men, barely by the use of their natural faculties, may attain to all the knowledge they have, without the help of any innate impressions; and may arrive at certainty, without any such original notions or principles.'²

'Let us suppose the mind to be, as we say, white paper void of all characters, without any ideas. How comes it to be furnished? Whence comes it by that vast store which the busy and boundless

¹ Op. cit., 'Epistle to the Reader', par. 4 (Everyman edn., p. xx).

² Ibid., Bk. I, Chap. II, par. 1 (p. 5).

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fancy of man has painted on it with an almost endless variety? Whence has it all the *materials* of reason and knowledge? To this I answer, in one word, from **EXPERIENCE**. In that all our knowledge is founded; and from that it ultimately derives itself. Our observation, employed either about *external sensible objects*, or about the *internal operations of our minds perceived and reflected on by ourselves*, is that which supplies our understandings with all the materials of thinking.¹

On the one hand the mind perceives the sensations it receives from the external world, and from the body: on the other hand certain purely mental processes go on like thinking, doubting, imagining, reasoning. However, all forms of perception are in truth but two—Sensation, and Reflection. Reflection is what the mind gets by the notice it takes of its own operations. No other sources of ideas of the mind are ever directly admitted by Locke. And the advantage of this procedure scientifically is that the contents of the mind are at once simplified and *exposed*. Sensations are, so to speak, the *open* contents of the minds: they are motivated by things external to the mind, like the objects of common daily experience. If sensations were to prove the ultimate source of all the mind's ideas, then scientifically speaking a *cause* of the mind would have been found. The origin of the mind would have been discovered to rest, not in itself, which would have made it mysterious, but in a physical process of action and reaction similar to that at the root of Newtonian theory. From this point, and without departing from his principles, Locke proceeds to examine the content and activity of the mind, and to show the relationship between the most complicated moral or intellectual processes and the initial Sensation or Reflection. In his analysis of simple and complex ideas he makes a distinction between the primary and secondary qualities of objects, made before him by Galileo and accepted by Newton, which has affected scientific thinking down to our own day. This is the dilemma he was thinking about:

'Flame is denominated hot and light; snow, white and cold; manna, white and sweet, from the ideas they produce in us. Which qualities are commonly thought to be the same in those bodies that those ideas are in us, the one the perfect resemblance of the other,

¹ *Ibid.*, Bk. II, Chap. I, par. 2 (p. 26).

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as they are in a mirror, and it would by most men be judged very extravagant if one should say otherwise. And yet he that will consider that the same fire that at one distance produces in us the sensation of warmth does, at a nearer approach produce in us the far different sensation of pain, ought to bethink himself what reason he has to say—that this idea of warmth, which was produced in him by the fire, is *actually in the fire*; and his idea of pain, which the same fire produced in him the same way, is *not in the fire*. Why are whiteness and coldness in snow, and pain not, when it produces the one and the other idea in us; and can do neither, but by the bulk, figure, number, and motion of its solid parts.¹

The primary qualities, he argued, are those which are really in the objects themselves, and they are bulk, number, figure and motion: and so they may be said to be the *real* qualities. The secondary qualities are simply the ideas produced in the mind by the operation of our senses, and so they are qualities which we impute to objects, rather than qualities which belong to them. And obviously these secondary qualities may bear little relation to the objects which arouse them in the consciousness. Colour is a conspicuous example of a secondary quality.

John Locke was not in the least deterred by the magnitude of his task. He investigated our ideas of infinity, eternity, and God as well as more humble ones. He found that our apprehension of space, or extension, comes to us through the experience of the sense of sight, while the notion of time is arrived at by the working of memory upon cyclic recurrences in our lives like the succession of days and years. Even our notion of infinity can be said to come to us out of the sensation of boundless space. So with the idea of God, for which he has an ingenious natural explanation:

'If we examine the idea we have of the incomprehensible Supreme Being, we shall find that we come by it the same way; and that the complex ideas we have both of God and separate spirits are made of the simple ideas we receive from reflection: v.g. having, from what we experiment in ourselves, got the ideas of existence and duration; of knowledge and power; of pleasure and happiness; and of several other qualities and powers, which it is better to have than to be without; when we would frame an idea the most suitable we can to

¹ *Ibid.*, Bk. II, Chap. VIII, par. 16 (p. 47).

the Supreme Being, we enlarge every one of these with our idea of infinity; and so, putting them together, make our complex idea of God.¹

He is under a necessity, too, to reduce moral ideas to the two props of his theory, sensation and reflection. He does so, in terms hardly distinguishable from those of Hobbes and which anticipate the hedonistic arguments of Bentham.

'Things then are good or evil, only in reference to pleasure or pain. That we call *good*, which is apt to cause or increase pleasure, or diminish pain in us; or else to procure or preserve us the possession of any other good or absence of any evil. And on the contrary, we name that *evil* which is apt to produce or increase any pain, or diminish any pleasure in us.'²

The empiricist insistence upon grounding ideas in sensation and reflection raises the problem of *knowledge*. It is one thing to receive sense-impressions. It is quite another to say how those sense-impressions, even joined to subsequent reflection about them, are built into structures of knowledge. For Locke the solution is to be found in *language*. God designed man as a sociable creature and 'furnished him also with language, which was to be the great instrument and common tie of society'. Man was fashioned by nature to make sounds and to use these sounds as signs of internal conceptions. But he and his fellows would have been perplexed had they been compelled to give a name to everything and to communicate only by names. Language offered the way out of this cul-de-sac by the invention of general terms 'whereby one word was made to mark a multitude of particular existences'. The source of this power of naming, one peculiar to man, and, since it is not shared by animals, not something brought into existence purely by sensation, or even reflection upon sensation, is not seriously considered. And as for its elevation into the power of abstraction, Locke observes that though nature has produced species, or things obviously alike, 'the sorting of them under names is the workmanship of the understanding, taking occasion, from the similitude it observes amongst them, to make abstract general ideas, and set them up in the mind, with names annexed to them, as patterns or forms, to which as

¹ *Ibid.*, Bk. II, Chap. XXIII, par. 33 (p. 154).

² *Ibid.*, Bk. II, Chap. XX, par. 1 (p. 107).

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particular things existing are found to agree, so they come to be of that species'.¹

There were certain obvious difficulties about Locke's sensationalism of which he himself was aware. His whole argument concerning rational man rested on *consciousness*. The soul 'must necessarily be conscious of its perceptions'. What then of sleep? He was driven to the conclusion that if it was possible for the soul, sleeping, to experience thinking enjoyments and concerns not known to the waking consciousness, then 'Socrates asleep and Socrates awake is not the same person'. Once grant unconscious experience and certainty about personal identity vanishes. Yet it is true that even the conscious mind is not permanently conscious of all the contents it is able so easily to recall as occasion requires. Though it has stacked up in its mind those general terms to which Locke makes reference, these are not constantly within the purview of consciousness. And Locke says so in his chapter 'On Retention', where he is forced to remark that the narrow mind of man can only take a few ideas under review at a time, and though it can revive old ideas, which are said to be in the memory, 'indeed they are actually nowhere; but only there is an ability in the mind when it will to revive them again, and as it were paint them anew upon itself.' In what sense then, by Lockian principles, is even consciousness evidence of identity?

Locke simplifies *perception*. The senses, he supposes, let in particular ideas and so furnish the empty cabinet of the mind. Yet is the thing perceived, the simple impression of sense? Or is there an intervening operation of the mind, whereby the sense impressions are first united according to some *a priori* conception? This idea is not alien to Locke's doctrine of reason as the voice of God; but it argues for the innate principles he is not prepared to accept. Yet in his doctrine of *intuitive knowledge* it seems (to me) he opens the door to the principle he has written his *Essay* to overthrow. All our knowledge consists, he said, 'in the view the mind has of its own ideas'. 'If we will reflect on our ways of thinking, we will find, that sometimes the mind perceives the agreement or disagreement of two ideas immediately by themselves, without the intervention of any other: and this I think we may call *intuitive knowledge*. For in this the mind is at no pains of proving or examining, but perceives the truth

¹ *Ibid.*, Bk. III, Chap. III, par. 13 (p. 211). Italic omitted.

as the eye doth light, only by being directed towards it.' In the manner of gestalt-psychology he produces examples: 'Thus the mind perceives that *white* is not *black*, that a *circle* is not a *triangle*, that *three* are more than *two* and equal to *one* and *two*.'¹ We are entitled to ask, where does this direct knowledge come from if the contrast and comparison of previously received ideas is not its source?

Open to attack also was Locke's theory of abstract ideas. Words, Locke argued, stand as the outward mark of our inward ideas, as we have already seen, and the process of abstraction takes place when particular names of particular things are taken as representatives of 'all of the same kind'. 'Thus the same colour being observed to-day in chalk or snow, which the mind yesterday received from milk, it considers that appearance alone, makes it representative of all that kind; and having given it the name *whiteness*, it by that sound signifies the same quality wheresoever to be imagined or met with.'²

Yes, but what about the word 'colour', which is an abstract term? If one describes a thing as *coloured*, that is a term which has meaning, but the mind does not use a *particular* colour to stand for the general term *colouration*. The difficulty is just as obvious with certain geometrical terms. Any actual square can stand for an abstract squareness. But what is the abstract idea of a triangle or of triangularity? It was this which was to draw Bishop Berkeley's fire, for Locke decided that the abstract idea could not be any particular triangle but 'it must be neither oblique, nor rectangular, neither equilateral, equicrural, nor scalenon; but all and none of these at once. In effect, it is something imperfect, that cannot exist; an idea wherein some parts of several different and inconsistent ideas are put together.'³ No wonder of this unhappy example the author acknowledged that it required 'some pains and skill to form this general idea of a triangle'. The capacity to abstraction which Locke recognized and which to some extent took the sting out of his nominalism, was by his own assertion extremely important. For he doubted whether brute creation rose to it. In the capacity for generalization and

¹ *Ibid.*, Bk. IV, Chap. II, par. 1 (p. 255).

² *Ibid.*, Bk. II, Chap. XI, par. 9 (pp. 61-62).

³ *Ibid.*, Bk. IV, Chap. VII, par. 9. (p. 287). For Berkeley's reproof see 'Defence of Free-Thinking in Mathematics', par. 45, in *Works*, Ed. A. A. Luce and T. E. Jessop, Vol. 4, p. 134.

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abstraction, he argued, was to be discovered the principal difference between beasts and man.

Locke believed, as Descartes did too, in both body and soul (or mind). The body was a material entity, the soul an immaterial one. Yet *sensation* seemed to be a material process. By what mechanism were material sensations turned over to become the property of the immaterial soul? Leibniz wrote on this very point that he could not assent to the vulgar view that the images of things were conveyed by organs of sense to the soul. It just was not possible to imagine any 'means of conveyance' by which images were carried from the sense-organ to the soul. It could not be explained how immaterial substance could be affected by matter or, conversely, matter operated by immaterial substance. Locke, in his defence against this kind of attack, exposed the ultimate unintelligibility of things:

'Sensation convinces us that there are solid, extended substances; and reflection, that there are thinking ones: experience assures us of the existence of such beings, and that the one hath power to move body by impulse, the other by thought; this we cannot doubt of. Experience, I say, every moment furnishes us with the clear ideas both of the one and the other. But beyond these ideas, as received from their proper sources, our faculties will not reach. If we would inquire further into their nature, causes and manner, we perceive not the nature of extension clearer than we do of thinking. If we would explain them any further, one is as easy as the other; and there is no more difficulty to conceive how a substance we know not should, by *thought*, set body in motion, than how a substance we know not should, by *impulse*, set body into motion. So that we are no more able to discover wherein the ideas belonging to body consist, than those belonging to spirit. From whence it seems probable to me, that the simple ideas we receive from sensation and reflection are the boundaries of our thoughts; beyond which the mind, whatever efforts it would make, is not able to advance one jot; nor can it make any discoveries, when it would pry into the nature and hidden causes of things.'¹

It is to be understood therefore why he writes of the understanding as a dark closet into which only a few small cracks or openings

¹ *Ibid.*, Bk. II, Chap. XXIII, par. 29 (p. 153). Italics modified.

let in the light of external reality. The man of empiricism is already dark, barely seen. All we know of him is the little area in which sensations play and about which reflections form. But who or what is behind this little play of light we have no means of knowing.

Locke's nominalism, if anything, darkens the picture. All things are only particulars: '*general* and *universal* belong not to the real existence of things; but are the inventions of the understanding'. That is a definition which makes general and universal terms useless as a means to describe reality. The individual, too, is a particular being. But if an individual is simply itself, that is to say a particular being into which general 'being' is not poured (there being no such universal), what is it that ties one man's understanding to the next? Not far along this road we come to the privacy and irrationality of all individual judgment, and the impossibility of any universal one. Indeed Locke wrote that it was unavoidable for the majority to have opinions without 'certain and indubitable proofs of their truth' and that just because of this men should be tolerant of one another. And since he also argued that no God-inspired man could communicate anything by revelation which could not be arrived at by sensation and reflection, it is clear that the same scepticism belongs to Locke's Christianity as to his epistemology.

In his political works, however, he is armoured with the certainties his philosophy lacks. His political philosophy is full of the most resounding assertions about God and man. In what must be one of the longest sentences in English philosophy—I forbear from quoting it in full—he writes:

'God having made man, and planted in him, as in all other animals, a strong desire for self-preservation, and furnished the world with things fit for food or raiment and other necessities of life, subservient to His design that man should live and abide for some time upon the face of the earth, and not that so curious and wonderful a piece of workmanship by its own negligence should perish again presently . . . God, I say, having made man and the world thus spoke to him—that is, directed him by his senses and reason . . . to the use of those things which were serviceable for his subsistence, and gave him the means of his "preservation" . . . and having planted in him as a principle of action by God Himself, reason, "which was the voice of God in him" could not but teach him and

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assure him that, pursuing that natural inclination he had to preserve his being, he followed the will of his Maker. . . .¹

Man as made in God's image, as partaking therefore of His being, illuminated from within by Reason, the voice of God, and working out God's will on earth, is a rounded, intelligible whole. Such a being was familiar to all Locke's contemporaries. Whether they willed it or not they absorbed this conception from the strongly theological age in which they lived. It was implicit in the Scriptures they heard read in church every Sunday from the days of their infancy. It was about this man that the debates on political freedom raged and the rights of man were asserted. He was in one sense the natural man of the social contract. They thought of such a man, beloved by God, as destined to a kind of perfection, born 'with a title to perfect freedom and an uncontrolled enjoyment of all the rights and privileges of the law of Nature'²—where the law of nature was nothing less than the will of God. It is precisely this man who melts away in Locke's empiricism.

¹ *Two Treatises of Civil Government*, Bk. I, Chap. 9, par. 86 (p. 61).

² *Ibid.*, Bk. 2, Chap. 7, par. 87 (p. 158).

CHAPTER SIX

‘Esse is Percipi’

GEORGE BERKELEY, BISHOP OF CLOYNE

(1685-1753)

George Berkeley, Bishop of Cloyne, was both a philosopher and a legend. The legend arose out of the popular view of the irresistible absurdity of his theories about matter. To his age he was the man who said that matter did not exist—‘And coxcombs vanquish Berkeley with a grin’. He has himself to blame for this misunderstanding, if misunderstanding it is, for he wrote books of philosophy in such light and lucid prose that any Grub Street hack of his day might read one of them through in the evening after dinner, and understand it. And he wrote such sentences as this one, in explanation of the nature of matter, of which the import is unmistakable: ‘Their *esse* is *percipi*, nor is it possible they should have any existence out of the minds of thinking things which perceive them.’ Berkeley’s contemporaries seized upon such pronouncements with a rich, almost Dickensian sense of their comicality. Boswell’s account of Dr. Johnson’s retort to Berkeley is well known:

‘After we came out of church we stood talking for some time together of Bishop Berkeley’s ingenious sophistry to prove the non-existence of matter, and that everything in the universe is merely ideal. I observed, that though we are satisfied that his doctrine is not true, it is impossible to refute it. I shall never forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, till he rebounded from it, “I refute it thus!”’¹

¹ *Boswell’s Life of Johnson*. Ed. G. B. Hill and L. F. Powell, Oxford, 1934, Vol. 1 p. 471.

The philosopher who denies the existence of matter, yet who, like the rest of us, cries out on stubbing his toe or running his nose into a post is clearly marked down to be turned into a 'character' by his contemporaries if there is the smallest chance of it. And Berkeley offered them the chances, partly because he was an Irishman—and Englishmen have always believed that Irishmen are naturally paradoxical and perverse—and partly because of certain schemes to which he was attached. He launched an enthusiastic enterprise to establish a college in Bermuda for the education of Red Indians, and it failed, and in his old age, when he was a venerable bishop, he was the centre of a controversy about the efficacy of infusions of Tarwater as a panacea for all ills. The notion of a bishop, in sleeves of lawn, stoking up boilers of tar, appealed to the comic sense of his time. Even upon his illnesses the wits of the day were exercised and we find a friend of his writing to Dean Swift: 'Poor philosopher Berkeley has now the idea of health, which was very hard to produce in him; for he had an idea of a strange fever on him so strong that it was very hard to destroy it by introducing a contrary one.'

Our own age, too, has resorted to teasing. Berkeley's theory that material objects exist only by being perceived produced this limerick from Monsignor Ronald Knox:

*There was a young man who said 'God
Must think it exceedingly odd
If he finds that this tree
Continues to be
When there's no one about in the Quad.'*

And the very natural reply, which is the true doctrine of Berkeley, that God is also an observer:

*Dear Sir,
Your astonishment's odd:
I am always about in the Quad
And that's why the tree
Will continue to be,
Since observed by
Yours faithfully,*

GOD.

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Some biographers of Berkeley have regretted, and even resented, the banter to which he has been subject. But there is no evidence that his reputation seriously suffered from it, even during his lifetime.

Berkeley was born near Kilkenny, in southern Ireland, in 1685, of a Protestant Irish family. At the age of fifteen he entered Trinity College, Dublin, and seven years later he was elected a Fellow. It was during his years as a fellow that he wrote his most important works—*A New Theory of Vision* (1709), *Treatise Concerning the Principles of Human Knowledge* (1710), and his *Three Dialogues* (1713). His philosophy was in the main completed before he was thirty. He came to London about the time of the publication of the last work and then a new life began for him as the darling of the wits: he was already famous before he arrived. We find talk of him in Swift's Journals, and in Pope's correspondence and verse. He breakfasts with Swift, goes to the theatre with Addison, argues in the coffee-houses and debates before royalty.

A year or two later, after a grand tour of the Continent, he was hard at work on the scheme for the College in Bermuda from which the whole of the Americas were to be evangelized. His eloquence won him the approval of scholars, prelates, the King and his ministers. His plan was given Parliamentary sanction and promised a grant of £20,000. It was a genuine missionary call, for Berkeley was a deeply religious man, and to further it he was ready to sacrifice his career in the Church: indeed did sacrifice it. An ironical letter from Jonathan Swift to the Lord Lieutenant of Ireland, supporting Berkeley, tells the story:

"There is a gentleman of this kingdom just gone for England; it is Dr. George Berkeley, dean of Derry, the best preferment among us, being worth about £1,100 a year. . . . He is an absolute philosopher with regard to money, titles, and power; and for three years past hath been struck with a notion of founding a university at Bermuda, by a Charter from the Crown. He hath seduced several of the hopefulllest young clergymen and others here, many of them well provided for, and all of them in the fairest way of preferment; but in England his conquests are greater, and I doubt will spread very far this winter. He shewed me a little tract which he designs to publish, and there your excellency will see his whole scheme of a life

academic—philosophical . . . of a college founded for Indian scholars and missionaries, where he most exorbitantly proposeth a whole hundred pounds a year for himself, forty pounds for a fellow, and ten for a student. His heart will break, if the deanery be not taken from him, and left to your excellency's disposal. I discourage him by the coldness of courts and ministers, who will interpret all this as impossible and a vision; but nothing will do. And therefore I do humbly entreat your excellency either to use such persuasions as will keep one of the first men in this kingdom for learning and virtue quite at home, or assist him by your credit to compass his romantic design, which is very noble and generous, and directly proper for a great person of your excellent education to encourage.'¹

The romantic design came to nothing: despite Parliamentary support, it was too visionary. But Berkeley's stay in Rhode Island while waiting for his grant was a very fruitful one for American education, and the infant universities of Yale and Harvard benefited particularly from the scholarships or libraries and other gifts from the generous scholar. So warmly did America come to cherish his memory that Californians named a town after him.

Berkeley returned disappointed to England and was shortly afterwards made Bishop of Cloyne, an obscure diocese in Ireland. He continued to write, but his later works lacked the force of his earlier ones. At Cloyne he was far from the scholar-recluse of contemporary legend, but carried on his pastoral work with great vigour: even his famous and best-selling essay into medicine, in the shape of his *Chain of Philosophical Reflections and Enquiries Concerning the Virtues of Tarwater* (1744), often humorously received, was simply part of a most courageous effort to make known among the starving Irish poor, afflicted by smallpox, fevers and fluxions, the simple remedies which could be prepared at home by people who had neither doctors nor hospitals to resort to. At Cloyne he brought up his family, teaching his sons the classics himself. He lost his youngest son at the age of fifteen and wrote most movingly about him:

'I had a little friend, educated always under mine own eye, whose painting delighted me, whose music ravished me, and whose lively,

¹ Swift to Lord Carteret, 3rd Sept., 1724. From *Life of George Berkeley* by A. A. Luce, London, 1949, p. 100. I am much indebted to this biography in this chapter.

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gay, spirit was a continual feast. It has pleased God to take him hence. God, I say, in mercy hath deprived me of this pretty, gay plaything. His parts and his person, his innocence and piety, his particularly uncommon affection for me, had gained too much upon me. Not content to be fond of him, I was vain of him. I had set my heart too much upon him—more perhaps than I ought to have done upon anything in this world.¹

Berkeley died, not at Cloyne, but at Oxford, where he had gone with his family to instal another son: he passed away while, with his family at tea, he was listening to the reading of the first chapter of the Epistle to the Corinthians. His wife left in a letter a tribute to his memory as eloquent as that which he had written about the death of his boy.

'You never heard him give his tongue the liberty of speaking evil. Never did he reveal the fault or secret of a friend. Most people are tempted to detraction by envy, barrenness of conversation, spite, and ill-will. But as he saw no one his superior, or perhaps his equal, how could he envy any one? Besides, an universal knowledge of men, things, and books prevented the greatest wit of his age from being at a loss for subjects of conversation; but had he been as dull as he was bright, his conscience and good nature would have kept close the door of his lips rather than to have opened them to vilify or lessen his brother. He was also pure in heart and speech; no wit could season any kind of dirt to him, not even Swift's. Now he was not born to all this, no more than others are, but in his own words, his industry was greater; he struck light at twelve to rise and study and pray, for he was very pious; and his studies were no barren speculations, for he loved God and man, silenced and confuted atheists, disguised as mathematicians and fine gentlemen. . . .'²

Pope attributed 'To Berkeley ev'ry virtue under heav'n' and another admirer wrote of him in his prime: 'So much understanding, so much knowledge, so much innocence, and such humility, I did not think had been the portion of any but angels till I saw this gentleman.'

As a scholar in holy orders, anxious to 'confute the atheists', George Berkeley began with the problems John Locke left un-

¹ Letter to Bishop Benson, *apud Luce*, op. cit., p. 208.

² Mrs. Anne Berkeley to her son George, *apud Luce*, op. cit., p. 181-182.

solved. Yet he accepted without question so much of John Locke's argument, certainly taking it for granted that all we have present in our mind is our perceptions, which derive from sensation and reflection, that he must be truly described as an empiricist of the school of Locke. He went even farther than Locke in denying the ability of the mind to form abstract ideas. It is therefore what he did with the empiricism he took over which made him an idealist or an immaterialist, and an outstanding figure in English philosophy.

When John Locke reduced the contents of the mind to the products of sensation and reflection, and denied innate ideas, or any other products of the mind not derived from experience, he saw that such an assertion might give rise to the suspicion that if the mind only knows its ideas, then perhaps there are only ideas to be known. Locke tried to meet this objection:

'But of what use is all this fine knowledge of *men's own imaginations*, to a man that inquires after the reality of things? It matters not what men's fancies are, it is the knowledge of things that is only to be prized: it is this alone gives a value to our reasonings, and preference to one man's knowledge over another's, that it is of things as they really are, and not of dreams and fancies.'¹ Locke escapes from this dilemma in a commonsense way by assuring us that first of all our simple ideas are involuntary ones—we cannot compel ourselves to have a perception of a tree, or a boat, or a person: they are either given or not given to the perception. 'From whence it follows that simple ideas are not fictions of our fancies but the natural and regular productions of things without us, really operating upon us; and so carry with them all the conformity which is intended or which our state requires.'²

Secondly, he argues that all our complex ideas, apart from those about substances, our moral and mathematical ideas for example, *do not require to conform to something outside themselves*. They have to be true in a logical way, that is they have to stand up to the mind's own criticism, but if they do that they are in themselves true. But this commonsense view that the world of substantial things outside the perceiver must exist, because it would be difficult to understand otherwise what all our complicated perceptions are about, leaves

¹ *Essay concerning Human Understanding*, Bk. IV, Chap. IV, par. 1 (p. 273).

² *Loc. cit.*

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much unsaid. Into the gaps in Locke's argument George Berkeley drove with genius and fire, and in language of great beauty.

'It is indeed an opinion *strangely* prevailing amongst men, that houses, mountains, rivers, and in a word all sensible objects have an existence natural or real, distinct from their being perceived by the understanding. But with how great an assurance and acquiescence soever this principle may be entertained in the world; yet whoever shall find in his heart to call it in question, may, if I mistake not, perceive it to involve a manifest contradiction.'¹

In the Introduction to *Principles of Human Knowledge* Berkeley makes a robust attack on Locke's doctrine of abstract ideas, making very great play with that absurd abstract triangle already discussed. A word becomes the sign, not of abstract ideas, Berkeley argues, but of several particular ideas. He is therefore prepared to admit the existence of general ideas, but not of abstract ones. That this is something more than a distinction without a difference this famous example shows: 'suppose a geometrician is demonstrating the method of cutting a line in two equal parts. He draws, for instance, a black line of an inch in length; this, which in itself is a particular line, is nevertheless with regard to its significance general, since, as it is there used, it represents all particular lines whatsoever, so that what is demonstrated of it, is demonstrated of all lines, or, in other words, of a line in general. And as that particular line becomes general, by being made a sign, so the name *line*, which taken absolutely is *particular*, by being made a sign is made *general*. And as the former owes its generality, not to its being the sign of an abstract or general line, but of *all particular* right lines that may possibly exist; so the latter must be thought to derive its generality from the same cause, namely, the *various particular* lines which it indifferently denotes.'²

The destruction of abstract ideas is important for him as affording an opportunity to dispose once and for all of the labyrinthine schoolmen and all their bickerings. He proposes to avoid the misunderstandings philosophy has accumulated by keeping his ideas

¹ *Principles of Human Knowledge*, Pt. I, par. IV (Everyman edn., pp. 114-5). The Everyman edition, entitled *A New Theory of Vision and Other Writings*, contains the title-piece, the *Principles*, and *Three Dialogues between Hylas and Philonous*. The page references for these three works are therefore to the same Everyman volume.

² *Ibid.*, Intro., par. xii (pp. 100-1).

'bare and naked' and unconfused by long-accepted but meaningless definitions (like abstraction). He will admit only such as is manifest to experience. And so he comes to the strictly empirical view that objects of human knowledge 'are either *ideas* actually (1) imprinted on the senses, or else such as are (2) perceived by attending to the passions and operations of the mind, or lastly (3) formed by the help of memory and imagination, either compounding, dividing, or barely representing those originally perceived ideas in the aforesaid ways'.¹

From this starting point, that the source of all our knowledge is either sensation or the passions and operations of the mind in itself, he passes to the question which loomed over Locke. Do we really know anything *but* the mind's ideas? Is not all, in some sense, perception?

'The table I write on I say exists, that is, I see and feel it; and if I were out of my study, I should say it existed, meaning thereby that if I was in my study, I might perceive it, or that some other spirit actually does perceive it. There was an odour, that is, it was smelled; there was a sound, that is to say, it was heard; a colour or figure, and it was perceived by sight or touch. This is all that I can understand by these and the like expressions. For as to what is said of the absolute existence of unthinking things without any relation to their being perceived, that seems perfectly unintelligible. Their *esse* is *percipi*, nor is it possible they should have any existence, out of the minds of thinking things which perceive them.'²

It follows that there is no substance other than spirit, and that to have an idea is the same as to perceive. There can be no such substratum to our experience (to our ideas or perceptions) as the unthinking substance assumed by Hobbes, Newton and Locke to be the basis of all reality. Locke, who is of course particularly under fire in the *Principles*, had exposed himself to this attack by the distinction he had made between primary and secondary qualities of objects. The primary qualities such as bulk, figure, number, etc., really belonged to the object itself, he had assumed, while secondary qualities like colour, heat or cold, roughness, or sweetness were attributes imputed to it by the mind. But if it were true that some qualities apparently observed in things occurred only in the mind,

¹ *Ibid.*, Pt. I, par. i (p. 113).

² *Ibid.*, Pt. I, par. iii (p. 114).

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by what logical process was it possible to say that the remaining qualities, observed by the senses, were the real qualities? Perhaps all the qualities observed in objects were nothing more than the products of perception, and matter possessed no being beyond those qualities of which we could be conscious. This was the line of argument which Berkeley developed, and it was essentially a conception, perfectly proper on empiricist lines, of the absurdity of attributing to matter a substantial reality, when all that was known of it was a perceptual reality.

In *New Theory of Vision*, an influential work on optics, Berkeley tried to make clear how little we understand of the co-ordinated reports of the senses which are our sole source of knowledge of reality:

'That which I see is only variety of light and colours. That which I feel is hard or soft, hot or cold, rough or smooth. What similitude, what connexion have those ideas with these? Or how is it possible, that any one should see reason to give one and the same name to combinations of ideas so very different before he had experienced their co-existence? We do not find there is any necessary connection betwixt this or that tangible quality, and any colour whatsoever. And we may sometimes perceive colours, where there is nothing to be felt. All which doth make it manifest that no man, at first receiving of his sight, would know there was any agreement between this or that particular object of his sight, and any object of touch he had already been acquainted with.'¹

And so he comes to the conclusion that extension, figures, and motions perceived by sight are quite distinct from the ideas of touch, even though we call them by the same names: there is not really any one idea common to both senses. There is no connection between visible magnitude and tangible magnitude. All such connections as we assume are the result of custom and experience. If I am sitting in my study and hear the sound of a coach driving along the street, then look through the window and see it, then walk out of the house and enter it 'common speech would incline to say, I heard, saw, and touched the same thing, to wit, the coach'. In fact the ideas of each sense are widely different 'but having been constantly observed to go together, they are spoken of as one and the

¹ Op. cit. par. ciii (Everyman edn., p. 60).

same thing'. It is, it follows, custom, too, which inclines us to build up behind our sense experiences a general 'matter' to which they all refer. But equally cogently it can be argued that of matter as something independent of perception we have no experience at all: the very idea of having an experience of something independent of the mind is a logical absurdity:

'But, say you, though the ideas themselves do not exist without the mind, yet there may be things *like* them, whereof they are copies or resemblances, which things exist without the mind in an unthinking substance. I *answer*, an idea can be like nothing but an idea; a colour or figure can be like nothing but another colour or figure. If we look but never so little into our thoughts, we shall find it impossible for us to conceive a likeness except only between our ideas. Again, I ask whether those supposed originals or extreme things, of which our ideas are the pictures or representations, be themselves perceptible or no? If they are, *then they are ideas*, and we have gained our point; but if you say they are not, I appeal to any one whether it be sense to assert a colour is like something which is invisible; hard or soft, like something which is intangible; and so of the rest.'¹

Matter becomes, on this argument, at the very best, a 'something' the real nature of which can never be perceived: it is the unknown occasion, at the presence of which ideas are excited in us by the will of God. But why make such an assumption?

It was up to this point that the popular opinion of the day was able to follow him; but there it stuck fast, and was never able to grasp the other side of his case, which was a more constructive one. Like Locke, Berkeley admitted that one could not choose one's sense experiences. 'When in broad daylight I open my eyes, it is not in my power to choose whether I shall see or no, or to determine what particular objects shall present themselves to my view.' The mind in this realm of experience is passive: it receives coherent and orderly impressions which are outside the compass of its *will*. And so it has to be admitted that they must have some cause beyond the will, even though the cause cannot be an inert, unthinking matter. But if we know nothing of matter, that is not to say that we have no knowledge of *anything* beyond ideas. We have a knowledge of

¹ *Principles of Human Knowledge*, Pt. I, par. viii (pp. 116-7).

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that which experiences ideas, of a self, and it is absurd to imagine that this 'self' is just another idea. For this self is not passive, as ideas are, but active. The self is a substance, but it is not a material substance, it is spirit.

'We perceive a continual succession of ideas; some are anew excited, others are changed or totally disappear. There is, therefore, some cause of these ideas, whereon they depend, and which produces and changes them. That this cause cannot be any quality or idea or combination of ideas, is clear. . . . It must therefore be a substance; but it has been shown that there is no corporeal or material substance; it remains, therefore, that the *cause of ideas* is an incorporeal, active substance, or spirit.'¹

Our personal spirit, whatever inner activity it may display, is demonstrably unable to determine the sense-impressions we receive, and so our impressions, which form our ideas, must still have a source outside ourselves. That source is the Supreme Spirit—God. Sense-perception is therefore a kind of divine language. God images in us, through it, the reality he desires.

In those superb Socratic dialogues published as *Three Dialogues between Hylas and Philonous in Opposition to Sceptics and Atheists* this crucial point is magnificently treated:

'HYL. Answer me, Philonous. Are all our ideas perfectly inert beings? Or have they any agency included in them?

'PHIL. They are altogether passive and inert.

'HYL. And is not God an agent, a being purely active?

'PHIL. I acknowledge it.

'HYL. No idea therefore can be like unto, or represent the nature of God?

'PHIL. It cannot.

'HYL. Since therefore you have no idea of the mind of God, how can you conceive it possible, that things should exist in his mind? Or, if you can conceive the mind of God without having an idea of it, why may I not be allowed to conceive the existence of matter, notwithstanding that I have no idea of it?²

In his answer Philonous develops the theory of notions. In *Principles* it is made clear that there is a difference between *idea* and

¹ *Ibid.*, Pt. I, par. xxvi (p. 126).

² *Op. cit.* (Everyman edn., p. 267).

soul, and that one's awareness of the identity of the perceiving spirit is not the same as awareness of the ideas communicated to it by experience. What Berkeley means by this 'notion of a spirit' is made clear by Philonous:

'PHIL. As to your first question: I own I have properly no idea, either of God or any other spirit; for these being active cannot be represented by things perfectly inert, as our ideas are. I do nevertheless know, that I, who am a spirit or thinking substance, exist as certainly as I know my ideas exist. Further I know what I mean by the terms *I* and *myself*; and I know this immediately, or intuitively, though I do not perceive it as I perceive a triangle, a colour, or a sound. The mind, spirit, or soul, is that indivisible, unextended thing, which thinks, acts, and perceives. I say *indivisible*, because unextended, and *unextended*, because extended, figured, moveable things, are ideas; and that which perceives ideas, which thinks and wills, is plainly itself no idea, nor like an idea. Ideas are things inactive, and perceived: and spirits a sort of beings altogether different from them. I do not therefore say my soul is an idea, or like an idea. However, taking the word *idea* in a large sense, my soul may be said to furnish me with an idea, that is an image, or likeness of God, though indeed extremely inadequate. For all the notion I have of God, is obtained by reflecting on my own soul, heightening its powers, and removing its imperfections . . . though I perceive Him (God) not by sense, yet I have a notion of Him. . . . All of which makes the case of *matter* widely different from that of Deity.'¹

Hylas returns to the charge that there is a contradiction here. Philonous, he retorts, is saying that ideas are different from spirits; but as on his own showing ideas are *unlike* spirits, he can have no idea of a spirit. Yet he accepts that they exist. What then of matter? Why should not one accept that it exists in the same faith? And to this thrust Philonous makes reply that he rejects the existence of matter, not because he has no notion of it but because the notion is inconsistent and repugnant. The notion of matter is tantamount to saying that there is a sphere of creation which is totally unreachable and incomunicable. On the other hand, the notion of spirit accords with the notion he has of his own being or soul, which he

¹ Ibid. (pp. 267-8).

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reaches by reflection. In a world of spirits he is at home. And by this cardinal point of doctrine Berkeley is assured that the reality he himself perceives is a permanent one, and independent of himself, because it is perceived by other spirits than his own, and especially by God. And so he escapes solipsism. Here therefore is what Berkeley himself has to say about the tree 'which continues to be/When there's no one about in the quad'.

'But then to a Christian it cannot surely be shocking to say, the real tree existing without his mind is truly known and comprehended by (that is, *exists in*) the infinite mind of God. Probably he may not at first glance be aware of the direct and immediate proof there is of this, inasmuch as the very being of a tree, or any other sensible thing, implies a mind wherein it is. But the point itself he cannot deny.'¹

The theory of *notion* as opposed to *idea* tacitly admits that one can have knowledge of something which is not an object of perception, and since to have a *notion* of a thing is not the same as the *existence* of the thing—my notion that I am a spirit is clearly not the same thing as the being of the spirit—the theory of notions brings back into experience the duality which 'esse is percipi' sought to dismiss. Where objects of sense-perception are concerned Berkeley is not prepared to admit that knowledge of a thing is any different from the existence of the thing. *Perceiving* is everything in his epistemology, it is at one and the same time existence and knowledge of existence.² But since the soul is admittedly different from the notion of it, as God is admittedly different from our imperfect apprehension of Him, the dismissed element of indirectness is smuggled back again, to the ruination of the general theory. We are in the world of phenomena, of appearances, given off by substances which are not themselves the appearances. It is this problem which might be said to lead to those passages in *Siris*, the work of his later years, in which the conceptualizing and analyzing powers of the mind are recognized as playing a role in the apprehension of reality. 'We know a thing when we understand it; and we understand it when we can interpret or tell what it signifies. Strictly, the sense knows nothing.' Elsewhere in that work (pars. 303 and 305) he dis-

¹ Ibid. (p. 271).

² See below, the theories of G. E. Moore, Chap. 14, p. 271.

tinguishes between *sense experience*, in which is no knowledge, and the *understanding* in which is no *sense*, as if to indicate that a review of sense experience by faculties of the mind is a necessary part of the process of perception. Despite these afterthoughts it does not seem possible to argue that Berkeley intended to change his fundamental position. *A Defence of Free-thinking in Mathematics*, written when he was fifty years old, restates with all his old vigour his criticism of Locke's abstract ideas.

In the exposition of his immaterialism, or in its defence, Berkeley launched many attacks upon the scientific ideas of his day, especially those of Newton. Newton's *abstractions* first drew his fire, for abstractions, which suggested concepts arrived at without perception, like absolute time and space, for example, threatened to bring down his own intellectual structure. Newton's distinction between absolute and relative time, absolute and relative space and motion, drew the remark that it 'doth suppose those quantities to have an existence without the mind: and that they are ordinarily conceived with relation to sensible things, to which nevertheless, in their own nature, they bear no relation at all'.¹ Time, for him, is simply generalized from the succession of ideas in our own minds: it has no existence apart from them. There is no absolute or void time as it were behind the succession, against which we measure duration, which Newton assumed. Duration and the measure of duration are one and the same thing.

Absolute or pure space, that extension in which Newton lodged his atomic particles, is also for him an illusion. Space is a relative thing and we derive the idea of it from what our senses tell us of the relative position of perceived bodies:

'And so let us suppose that all bodies were destroyed and brought to nothing. What is left they call absolute space, all relation arising from the situation and distances of bodies being removed together with the bodies. Again, that space is infinite, immovable, indivisible, insensible, without relation and without distinction. That is, all its attributes are privative or negative. It seems therefore to be mere nothing. The only slight difficulty arising is that it is extended, and extension is a positive quality. But what sort of extension, I ask, is that which cannot be divided nor measured, no part of which can

¹ *Principles of Human Knowledge*, Pt. I, par. cx (p. 169).

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be perceived by sense or pictured by the imagination? . . . Pure intellect, too, knows nothing of absolute space.¹

At the heart of the Newtonian theory of mechanism is the idea of pure motion—of a body in absolute space proceeding in a straight line undeflected by the existence of other bodies. But Berkeley will not accept this abstraction any more than any other. Motion is relative: to conceive it, there must be at least two bodies which vary in distance and position from each other. 'Hence if there was only one body in being it could not possibly be moved.'

In *De Motu*, the terms *gravitation*, *attraction*, *force* are also subject to close inspection. What do we mean by them? To their purely scientific use, as terms for occurrences we do not properly understand, Berkeley makes no objection. But what he cannot approve is the carving out, or abstracting, of 'certain natures' from all these things and the manufacture thereby of occult qualities. Sense and experience inform us of the existence of two supreme classes of things, body and soul. Body is that which we are taught by our senses to recognize as the extended thing. But nothing that we learn about *body* explains what motion is, or what its cause is. When we call a body heavy we know nothing more than that it is borne downwards. Heavy things seek the centre of the earth, but in doing so they behave quite passively. Bodies in motion, in fact, behave exactly like bodies at rest. Indeed, bodies persist in either state, and for the body there is no difference between the two states. Attraction, action and reaction in bodies are mathematical hypotheses, not physical qualities.

The most interesting of all attacks is upon the infinitesimals of Newton and Leibniz. The invention of the calculus was one of the great steps in seventeenth century science, perhaps as important as the mechanical theory of the universe. Greek mathematicians had thought of a circle as a series of points placed close together and joined by straight lines. A circle was, therefore, a polygon of as many sides as one chose to have. A curve had the same geometric qualities. But in that century of flying cannon balls it seemed absurd, even in an abstract sense, to contemplate a ball jumping from point to point through the air. The path of the cannon shot was

¹ *De Motu*, par. 53. From *The Works of George Berkeley*. Ed. by A. A. Luce and T. E. Jessop, London, 1951, Vol. 4, p. 45.

continuous and curved. But how express this geometrically and algebraically? This was a problem to which Descartes' geometry contributed. During the period of his seclusion from the plague young Isaac Newton made his own contribution to the measurement of curves and tangents, and the areas subtended by curves. By that route he came to the discovery of fluxions. The value of fluxions lay in the measurement of velocities and rates of acceleration. If the path of a projectile was considered to be a continuously moving point, then its velocity could be measured by dividing the distance travelled by the time taken. And since the movement of the projectile is continuous, not discontinuous, it follows that any portion of the track divided by its proportionate time will give the velocity: *even an infinitesimal portion divided by its infinitesimal proportion of time*. Continuous motion or acceleration had to be conceived as a series of infinitesimal increments. Put in another way, a finite but continuous motion is equal to the quotient of an infinitesimal distance and an infinitesimal time. Newton named the moving point the *fluent*: velocity he called *fluxion*, indicated by \dot{x} .

Berkeley did not object to the uses to which this intellectual device was put, but to the philosophical consequences. For if one could proceed to the division of reality into points so minute as to be below sense experience, and to derive laws of nature from their behaviour, then knowledge of reality was no longer derived from sense experience but from that which Berkeley denied, intellectual abstraction. The *minimum sensibile* is more than an infinitesimal, he said. It has magnitude and it must be indivisible. A line, for Berkeley, consisted of a finite number of points, not an infinite number of infinitesimal points. Similarly a surface consisted of a finite number of lines, a cube a finite number of surfaces or planes. The infinite divisibility assumed by fluxions was anathema to him. In *The Analyst* he wrote:

'And yet in the *calculus differentialis*, which method serves to all intents and ends with that of fluxions, our modern analysts are not content to consider only the difference of finite quantities: they also consider the differences of those differences, and the differences of the differences of the first differences. And so on *ad infinitum*. That is, they consider quantities infinitely less than the least discernible quantity; and others infinitely less than those infinitely small ones,

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and still others infinitely less than the preceding infinitesimals, and so on without end or limit . . . As there are first, second, third, fourth, fifth, etc., fluxions, so there are differences, first, second, third, fourth, etc., in an infinite progression towards nothing, which you still approach and never arrive at. And (which is most strange) although you should take a million of millions of these infinitesimals, each whereof is supposed infinitely greater than some other real magnitude, and add them to the least given quantity, it shall never be the bigger. For this is one of the modest *postulata* of our modern mathematicians, and is a corner-stone or ground-work of their speculations.¹

Of course the whole structure was absurd on grounds of empiricism or commonsense: it was simply a device which indicated how close mathematics was to logic. If one unit A equals one unit B then logic suggests that a division of each by four will produce the situation in which the relationship between the residual parts is exactly that which holds between the units. In practical experience there is a limit to the divisibility of the units; but in the abstract world of mathematics a division carried on to infinity still produces the same logical relationship. And so simple an intellectual device proved the means of calculating that which had previously defied calculation.

Berkeley's *Analyst* was subtitled 'A Discourse Addressed to an Infidel Mathematician'. Berkeley's contemporaries assumed the villain to be Newton, modern scholarship tends to identify him as Halley, immortalised in his comet. And much of the sting of this and similar attacks on contemporary mathematical principles, which Berkeley carried on with such mathematical skill and learning, was directed at the idea of sober natural philosophers all sitting meekly beneath the altar of their mathematical mysteries, while they demurred at the demands of the Christian religion upon their faith. By his attack Berkeley forced his opponents to make clear their ground: he set going a controversy which stirred up a lot of dust; into its absorbing technicalities it repays even the contemporary mathematician to venture.

There was, of course, a certain arbitrariness in the idealism of Bishop Berkeley. Much too much value was given to the experiences

¹ Op. cit., par. 6. (*The Works of George Berkeley*, Vol. 4, p. 68.)

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of the senses, far too little, and that tardily, to the organizing power of the mind. If we have 'notions' about ourselves, or God; or if we are able to examine, contrast and compare our sense data, and so to form a coherent whole out of sense-experience, then it at least seems possible that we are in the presence of principles in the mind independent of sense experience, though perhaps only called into activity by them. In any case a defence of God and spirit by way of an idealism begotten from empiricism could all too easily be turned against Berkeley's own position. His contemporaries and successors could, if they chose, write down his arguments about spirit by the same kind of analysis by which he chose to write off matter. Before long they did so. What then was left of the Berkeleyan position? Simply this, that we could be certain that we had ideas, and that they were the result of sensations and reflections, but of nothing else at all. The limits of scepticism were to be reached by David Hume

CHAPTER SEVEN

Empiricism into Scepticism

DAVID HUME (1711-1776)

David Hume was the last and greatest of the trilogy of English empiricists who changed the direction of European philosophy. He was born at Edinburgh on 26th April 1711, old style: his father was the owner of a small estate in Berwickshire. He was educated at home and in 1723, at the age of twelve, entered Edinburgh University. His family was far from rich and it was necessary that he should make his own way in the world: he was to do so in ways other than those expected by his family. He has left us a short account of his life, written not long before he died, and in this he wrote that 'My studious disposition, my sobriety, and my industry, gave my family a notion that the law was a proper profession for me; but I found an unsurmountable aversion for everything but the pursuits of philosophy; and while they fancied I was poring over Voet and Vinnius, Cicero and Virgil were the authors I was secretly devouring.'¹

He was sent to some merchants in Bristol to make a beginning in commerce, but failed dismally to fit in and, so, he relates, 'I went over to France, with a view of prosecuting my studies in a country retreat; and there I laid that plan of life, which I have steadily and successfully pursued. I resolved to make a very rigid frugality supply my deficiency of fortune, to maintain unimpaired my independency, and to regard every object as contemptible, except the improvement of my talents in literature.'²

¹ *Letters of David Hume to William Strahan*. Ed. G. Birkbeck Hill, Oxford, 1888, p. xviii.

² *Ibid.*, xix-x.

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The time he spent in France over his books was turned to the very best advantage for there he wrote his *Treatise of Human Nature* the first two volumes of which were published in England in 1739, when he was no more than twenty-seven years old, the third in 1740. Of this work of philosophical genius he lamented: 'Never literary attempt was more unfortunate than my *Treatise of Human Nature*. It fell *dead born from the press*, without reaching such distinction as even to excite a murmur among the zealots. But being naturally of a cheerful and sanguine temper, I very soon recovered from the blow, and prosecuted with great ardour my studies in the country.'¹

After the publication of the *Treatise* Hume retired to the little family estate of Ninewells and occupied himself with his political writings. In 1741 he published his *Essays* which had an immediate success and laid the foundations of his later considerable literary fame. He failed to secure the chair of moral philosophy at Edinburgh and became instead the tutor-keeper of the Marquis of Annandale whose lunacy had taken a literary form. It was not a post for which his sanguine temperament fitted him, and it did not last.

In 1746 he broke his voluntary rustication and served as secretary to General St. Clair in an ill-fated expedition against the French coast, and later under him again at the embassies of Vienna and Turin. 'These two years were almost the only interruptions which my studies have received during the course of my life: I passed them agreeably, and in good company; and my appointments with my frugality, had made me reach a fortune, which I called independent, though most of my friends were inclined to smile when I said so; in short, I was now master of near a thousand pounds.'² The next twelve years of his life saw his greatest literary output. He published his *Political Discourses*, which had some success, and a revised version of the third volume of the *Treatise of Human Nature*, called *Inquiry concerning the Principles of Morals* which he regarded as 'incomparably the best' of his works. At this time he wrote also his sceptical *Dialogues concerning Natural Religion* which was not published till three years after his death, for he had been persuaded

¹ *Ibid.*, p. xx. A shortened *Treatise*, *Essays* (later *Inquiry*) concerning *Human Understanding* was published in 1748.

² *Ibid.*, p. xxii.

by friends to hold it back. His efforts to secure a chair at Edinburgh University continued to be disappointed but he did receive in 1751 the librarianship of the Advocates Library in Edinburgh. It brought him in only £40 a year but gave him unique opportunities for study. His *History of England* appeared in five volumes between 1754 and 1762: after a poor start they sold so well as to make him wealthy. Hume was a Scot and a Tory—a nationalist who believed that the dominant Whigs were conspiring to destroy everything Scottish. His distrust of the English was fanned by the critical reception of his *History*, and his work showed increasingly the influence of his passion. Nevertheless it remains a most important and in some ways an innovating work: and it was at first as a historian that he was known to his contemporaries.

He was more than a trifle complacent about his rising success in writing; one has to admit that he was a young man with a high opinion of himself. He boasted somewhat naively of his financial affairs: 'Notwithstanding this variety of winds and seasons, to which my writings had been exposed, they had still been making such advances, that the copy-money given me by the booksellers much exceeded anything formerly known in England. I was become not only independent, but opulent, I retired to my native country of Scotland, determined never more to set my foot out of it.'¹

He did not keep this vow, for he served once again in embassies abroad, and retired only in 1769, 'very opulent, for I possessed a revenue of £1,000 a year' and this time it was for good. A few years later he was stricken with an incurable, but not painful malady and died, cheerfully, in 1776. In his own life story David Hume gave himself a very high character. 'I was, I say, a man of mild dispositions, of command of temper, of an open, social and cheerful humour, capable of attachment, but a little susceptible to enmity, and of great moderation in all my passions.' And this judgment seems to have been a true one, for his friend Adam Smith, whose famous work on political economy, *The Wealth of Nations*, was published in the year that Hume died, wrote:

'His temper, indeed, seems to be more happily balanced, if I may be allowed such an expression, than that perhaps of any other man I have ever known. Even in the lowest state of his fortune, his

¹ *Ibid.*, p. xxx.

great and necessary frugality never hindered him from exercising upon proper occasions, acts both of charity and generosity. It was a frugality founded, not upon avarice, but upon love of independency. The extreme gentleness of his nature never weakened either the firmness of his mind, or the steadiness of his resolutions. His constant pleasantry was the genuine effusion of good-nature and good humour, tempered with delicacy and modesty, and without even the slightest tincture of malignity, so frequently the disagreeable source of what is called wit in other men. . . . Upon the whole, I have always considered him, both in his lifetime and since his death as approaching as nearly to the idea of a perfectly wise and virtuous man, as perhaps the nature of human frailty will permit.¹

One event of his life of which he does not speak in his autobiography, was his acquaintance with Jean-Jacques Rousseau, whom he befriended when Rousseau took refuge in England from his enemies in France. Hume secured a home for him where he might live and work in peace, but Rousseau had reached the stage of persecution mania in which he saw plots against himself everywhere, and a quarrel flared up between the two men. In his calm and judicial account of what happened David Hume summed up his fellow-philosopher of the Enlightenment with a Scottish shrewdness: 'He has only felt, during the whole course of his life. He is like a man who was stript not only of his clothes, but of his skin, and turned out in that situation to combat with the rude and boisterous elements.'

Rousseau is even more enlightening in his account of how the two philosophers sat silent by the fireside, Hume no doubt contemplating the uncertainty of all things, but Rousseau seething with suspicions about his friend's opinion of him. Rousseau wrote: 'Presently after this I was seized with the most violent remorse; I even despised myself; till at length in a transport which I still remember with delight, I sprang upon his neck, embraced him eagerly; while almost choked with sobbing, and bathed in tears, I cried out, in broken accents, "No, no, David Hume cannot be treacherous. If he be not the best of men, he must be the basest." David Hume politely returned my embraces, and gently tapping me on the back, repeated several times, in a placid tone, "Why, what,

¹ Letter to William Strahan, 26th Aug. 1776. (*Ibid.*, pp. xxxix-xl.)

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my dear sir! Nay, my dear sir! Oh! my dear sir!" He said nothing more. I felt my heart yearn within me.¹

No other anecdote could strike off more succinctly what was most characteristic of each philosopher. Yet what was most important was not that they quarrelled, but that they met, for they were the two most representative thinkers of their age, and different as they appear on superficial glance, both exalted Nature and feeling above reason, and their germinal influence on the romantic movement of the century after theirs is beyond computation.

David Hume's *Treatise of Human Nature* has, it has often been said, the faults of a young man's work. It is somewhat lordly and patronising, and it fails often to acknowledge his debt to his predecessors. But these are minor criticisms beside the breath-taking sweep and acute psychological insight of this confident piece of writing. Its first and foremost significance is that it carries the arguments of Locke and Berkeley to their logical conclusion. It is the *reductio ad absurdum* of empiricism. Like his predecessors, Hume finds that the sole contents of the mind are perceptions:

"The only existences, of which we are certain, are perceptions, which, being immediately present to us by consciousness, command our strongest assent, and are the first foundation of all our conclusions."²

Where, however, Berkeley was willing to suppose that we have, in addition to perception, a *notion* of spiritual beings like ourselves and a *notion* of God, and that these two notions support our idea of the existence of an external reality about which our perceptions tell us, David Hume was prepared to concede nothing. He worked methodically through the whole of the mind's experiences in order to show us that we can be certain of nothing our reason tells us.

Any effort to say that all the contents of the mind have a direct relation to sense-impressions involves the careful observer in one difficulty straight away—that the mind contains many complex ideas which do not appear to be related to perceptions. In this group are mental processes like imagining, reasoning, using mathematical skills and so on. They seem to suggest that the mind possesses an

¹ *Life and Correspondence of David Hume*. Ed. J. H. Burton, Edinburgh, 1846, Vol. II, p. 339.

² Op. cit., Bk. I, Pt. IV, Sec. 2 (Everyman edn., Vol. I, p. 204).

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innate content. David Hume made haste to deny this. First he distinguished between *impressions* and *ideas*:

'The difference between these consists in the degrees of force and liveliness with which they strike upon the mind, and make their way into our thoughts or consciousness. Those perceptions which enter with the most force and violence, we name *impressions*; and under this name I comprehend all our sensations, passions and emotions, as they make their first appearance in the soul. By *ideas* I mean the faint images of these in thinking and reasoning.'¹

Ideas can be simple or complex, he explains:

'I can imagine to myself such a city as the New Jerusalem, whose pavement is gold, and walls are rubies, though I never saw any such. . . . I perceive, therefore, that though there is in general a great resemblance betwixt our *complex* impressions and ideas, yet the rule is not universally true, that they are exact copies of each other. We may next consider, how the case stands with our *simple* perceptions. After the most accurate examination of which I am capable, I venture to affirm, that the rule here holds without any exception, and that every simple idea has a simple impression which resembles it, and every simple impression a correspondent idea. That idea of red, which we form in the dark, and that impression which strikes our eyes in sunshine, differ only in degree, not in nature.'²

As complex ideas can be broken down into simple ideas, then in the end it is always possible to find an exact correspondence between idea and impression, however far away the idea may seem to have strayed from its parent impression. He argues that this is true even of abstruse conceptions such as space and time. We do not need to think of them as innate.

'The table before me is alone sufficient by its view to give me the idea of extension. This idea, then, is borrowed from, and represents, some impression which this moment appears to the senses. But my senses convey to me only the impressions of coloured points, disposed in a certain manner. If the eye is sensible of anything further, I desire it may be pointed out to me. But, if it be impossible to show anything further, we may conclude with certainty, that the idea of

¹ *Ibid.*, Bk. I, Pt. I, Sec. I (Vol. I, p. 11).

² *Ibid.*, Bk. I, Pt. I, Sec. I (Vol. I, p. 13).

extension is nothing but a copy of these coloured points, and of the manner of their appearance.

'The idea of time, being derived from the succession of our perceptions of every kind, ideas as well as impressions, and impressions of reflections as well as of sensations, will afford us an instance of an abstract idea, which comprehends a still greater variety than that of space, and yet is represented in the fancy by some particular individual idea of a determined quantity and quality.'

'Wherever we have no successive perceptions, we have no notion of time, even though there be a real succession in the objects. From these phenomena, as well as from many others, we may conclude, that time cannot make its appearance to the mind, either alone or attended with a steady unchangeable object, but is always discovered by some *perceivable* succession of objects.'¹

Hume's determination that nothing but perception, and perception of singulars, is to be regarded as the origin of our complicated mental processes involves him in a difficult theory of cognition. Everything proceeds from impressions. Ideas are simply fainter impressions: 'I compare an impression with an idea, and find that their only difference consists in their different degrees of force and vivacity.' Qualitative difference is expressly excluded, though without it there are not many distinct mental operations but only one kind. But we do not only possess sense-impressions, and the ideas which are the pale reproductions of those impressions, we possess beliefs, both about nature and ourselves. What is the origin of a belief? A belief, by Hume's definition, 'is a more vivid and intense conception of an idea, proceeding from its relation to a present impression'. A belief then is an idea restored to the force of an impression, and this by being roused through yet another impression which calls it up. In other words a belief is not something logically and inherently true to the believer, but something which is made to appear so by an *association of ideas*. In Hume therefore is to be found the origin of the associationist psychology which was to dominate English thinking for more than a hundred years. This example makes his associationist thesis clear:

'A person, who stops short in his journey upon meeting a river in his way, foresees the consequences of his proceeding forward;

¹ Ibid., Bk. I, Pt. II, Sec. III (Vol. I, pp. 41-2).

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and his knowledge of these consequences is conveyed to him by past experience, which informs him of such certain conjunctions of causes and effects. But can we think, that on this occasion he reflects on any past experience, and calls to remembrance instances that he has seen or heard of, in order to discover the effects of water on animal bodies? No, surely; this is not the method, in which he proceeds in his reasoning. The idea of sinking is so closely connected with that of water, and the idea of suffocating with that of sinking, that the mind makes the transition without the assistance of the memory. Custom operates before we have time for reflection. . . . But as this transition proceeds from experience, and not from any primary connection betwixt the ideas, we must necessarily acknowledge, that experience may produce a belief and a judgment of causes and effects by a separate operation, without being once thought of.¹ And he goes on to make his most important point—that this removes all pretext for thinking that the mind becomes convinced *by reason* of the principle that the events of the future must resemble those already experienced.

The effort to destroy the qualitative distinctions made by the mind, and to make it seem that a memory of an act of imagination is different from a sense impression only in the degree of its force, and to imply that a belief is only distinct from either in being an idea of greater force than other ideas, is serious enough for cognition. It removes judgment, deliberation and selection in favour of fortuitous association. Indeed, Hume declares: 'Thus, all probable reasoning is nothing but a species of sensation. It is not solely in poetry and music we must follow our taste and sentiment, but likewise in philosophy. When I am convinced of any principle, it is only an idea which strikes more strongly upon me. When I give preference to one set of arguments above another, I do nothing but decide from my feeling concerning the superiority of their influence. Objects have no discoverable connexion together; nor is it from any other principle but custom operating upon the imagination, that we can draw any inference from the appearance of one to the existence of another.'²

Already, in these passages, the structure of Hume's famous theory

¹ *Ibid.*, Bk. I, Pt. III, Sec. VIII (Vol. I, p. 106).

² *Ibid.*, Bk. I, Pt. III, Sec. VIII (Vol. I, pp. 105-6).

of causation is to be discovered. If reason is not to be considered the origin of our idea of causation, then where do we gather the idea of a necessary connection between certain events succeeding one another in time, or between objects apparently related in space? If I watch a lump of ice melt before a fire, I assume immediately that the heat of the fire *caused* the ice to melt. All that I have *witnessed* is two separate things—a hot fire, and a lump of melting ice. Nothing in what Hume calls my impressions of the scene before me tells me that fire melts ice. That is a judgment I make in my own head. Where do I get this idea of causation? Is it just from that side-by-sideness of things we call contiguity, or from one-thing-after-another, which is succession?

'Shall we rest contented with these two relations of contiguity and succession, as affording a complete idea of causation? By no means. An object may be contiguous and prior to another, without being considered as its cause. There is a *necessary connection* to be taken into consideration; and that relation is of much greater importance, than any of the other two above mentioned.

'Here again I turn the object on all sides, in order to discover the nature of this necessary connection, and find the impression, or impressions, from which its idea may be derived. When I cast my eye on the *known qualities* of objects, I immediately discover that the relation of cause and effect depends not in the least on *them*. When I consider their *relations*, I can find none but those of contiguity and succession; which I have already regarded as imperfect and unsatisfactory. Shall the despair of success make me assert, that I am here possessed of an idea, which is *not* preceded by any similar impression? This would be too strong a proof of levity and inconstancy; since the contrary principle has been already so firmly established. . . .'¹

The conclusion he came to was shattering for the scholars and scientists of his day: summarized, it is this: we cannot prove the necessity of a cause unless we can show that nothing can come into existence, or change, without one. We have to demonstrate, therefore, the *necessity* for a productive principle, and this is impossible to do. We can consider cause and effect quite separately, he explains—we are not condemned to imagine them together. We can con-

¹ *Ibid.*, Bk. I, Pt. III, Sec. III (Vol. I, p. 80).

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sider ice melting without being compelled to yoke it to a fire: we may think of a fire without ice melting before it. And since we habitually make this sort of separation of objects, and without any difficulty, it is 'fallacious and sophistical' to imagine that they are automatically joined in cause and effect. Why *must* everything have a cause? There is no *must* about it, he asserts. We observe a side-by-sideness of things, or a succession of things in time, or both at once, and because certain conjunctions (such as melting ice and hot fire) occur and recur many times in our experience, we form a custom or habit—it is nothing more—of associating the one with the other as effect and cause; but it is illogical nevertheless:

'There is nothing in any object, considered in itself, which can afford us a reason for drawing a conclusion beyond it; and that even after the observation of the frequent or constant conjunction of objects, we have no reason to draw any inference concerning any object beyond those of which we have had experience.'¹

Since we are so wrong about one of the principal activities of the mind, in what is it possible for the reason to be right?

'Should it be here asked me, whether I sincerely assent to this argument, which I seem to take such pains to inculcate, and whether I be really one of those sceptics who hold that all is uncertain, and that our judgment is not in *any* thing possessed of *any* measures of truth and falsehood; I should reply, that this question is entirely superfluous and that neither I, nor any other person, was ever sincerely and constantly of that opinion. . . . My intention then in displaying so carefully the arguments of that fantastic sect [of sceptics], is only to make the reader sensible of the truth of my hypothesis, *that all our reasonings concerning causes and effects, are derived from nothing but custom; and that belief is more properly an act of the sensitive, than of the cogitative part of our natures.*'²

It is not simply causation which goes by the board, but reason too. 'The *intense* view of these manifold contradictions and imperfections in human reason has so wrought upon me, and heated my brain, that I am ready to reject all belief and reasoning, and can look upon no opinion even as more probable or likely than another.'³

¹ *Ibid.*, Bk. I, Pt. III, Sec. XII (Vol. I, p. 139). Italic omitted.

² *Ibid.*, Bk. I, Pt. IV, Sec. I (Vol. I, p. 179).

³ *Ibid.*, Bk. I, Pt. IV, Sec. VII (Vol. I, p. 253).

With the abandonment of reason, science, too, is undermined. For the whole of science rests on the assumption that from the observation of objects and events real causes can be discovered and natural laws brought to light: from Roger Bacon onwards this had been the presupposition of all English metaphysicians. In the end, as was to be expected from Hume's method of analysis, neither body nor mind escaped the scythe. Berkeley reached the point where materiality was denied; but at least he was able to rest his scheme of reality upon immaterial spirits, of which the Self was one. Hume was unable to admit its presence, and carried the empiricist argument forward into a total rejection of the Self:

'For my part, when I enter most intimately into what I call *myself*, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch *myself* at any time without a perception, and can never observe anything but the perception. When my perceptions are removed for any time, as by sound sleep, so long am I insensible of *myself*, and may be truly said not to exist. And were all my perceptions removed by death, and could I neither think, nor feel, nor see, nor love, nor hate, after the dissolution of my body, I should be entirely annihilated, nor do I conceive what is further requisite to make me a perfect nonentity. If anyone, upon serious and unprejudiced reflection, thinks he has a different notion of *himself*, I must confess I can reason no longer with him. All I can allow him is, that he may be in the right as well as I, and that we are essentially different in this particular. He may, perhaps, perceive something simple and continued, which he calls *himself*; though I am certain there is no such principle in me. . . . I may venture to affirm of the rest of mankind, that they are nothing but a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement.'¹

Descartes asserted 'I think, therefore I am': Hume, on the contrary, 'I think, therefore I cannot be'. It is hard to imagine a more complete negation of the general assumptions of European philosophy up till that time. Hume's nihilistic conclusion is given strength by the romantic loftiness with which he slams the door on philosophy, as if to say, we don't need to go into that dusty room again.

¹ Ibid., Bk. I, Pt. IV, Sec. VI (Vol. I, p. 259).

I don't expect anyone will believe all this, he assures us every now and then in confidential asides, for when I stop thinking about it, I don't believe it myself. Nature, he explains (though why he should believe in Nature when all else has failed is not clear) protects him from the disbelief to which his reason leads him. 'Nature is obstinate, and will not quit the field, however strongly attacked by reason.'

'This sceptical doubt, both with respect to reason and the senses, is a malady which can never be radically cured, but must return upon us every moment, however we may chase it away, and sometimes we may seem entirely free from it. It is impossible, upon any system to defend either our understanding or senses; and we but expose them further when we endeavour to justify them in that manner. As the sceptical doubt arises naturally from a profound and intense reflection on those subjects, it always increases the further we carry our reflections, whether in opposition or conformity to it. Carelessness and inattention alone can afford us any remedy.'¹

The attack upon causation, like that upon reason itself, was designed to show how little dependence we can place upon the logical functions of the mind and how much fundamentally we rest upon inner, unknown *feelings*. A little more emphasis or analysis of the source of these unknown feelings might have made Hume a philosopher of quite another kind: one basing his view of reality upon the conviction that intuitions or unknown principles of the mind govern all our apprehension. As it was he clarified his position in one of his letters by saying 'I have never defended the absurd proposition that a thing could come into being without cause: all I maintained was only that our certainty of the falsehood of this proposition arises neither from intuition nor demonstration, but from another source'.

In his Appendix to *A Treatise of Human Nature*, which by its generous confession of error endears the man to us, he treats of the principal philosophical difficulties of his work. 'If,' he writes, 'perceptions are distinct existences, they form a whole only by being connected together.' But how are they connected together? 'No connections among distinct existences are ever discoverable by

¹ *Ibid.*, Bk. I, Pt. IV, Sec. II (Vol. I, p. 209).

human understanding. We only *feel* a connection. . . ? And this leads him to admit that 'there are two principles which I cannot render consistent, nor is it in my power to renounce either of them, viz. that all our distinct perceptions are distinct existences, and that the mind never perceives any real connection among distinct existences. Did our perceptions either inhere in something simple and individual, or did the mind perceive some real connection among them, there would be no difficulty in the case. For my part, I must plead the privilege of a sceptic and confess that this difficulty is too hard for my understanding.'¹ It was a difficulty made inevitable by the terms of the empiricist approach. For all follows very logically. If the mind is nothing but the content of its sense impressions, present and past, and if these sense impressions are atomic, that is of particulars and items, and not of wholes, how does the mind arrive at its logical and interconnected apprehensions of unity, with causation, order, intelligibility, structure, as given principles? This has been, in effect, the empiricist dilemma which has caused Bertrand Russell, the modern Hume, to set limits to the empiricist method in our own day. If it is argued that all these suppositions about reality are illusions bred of habit, then they become even more inexplicable. Logically the mind cannot be granted power to reach conclusions about the structure of reality unless it is also granted (a) a power to 'compound and divide' its initial atomic sense-impressions and to interpret them according to *a priori* principles, or (b) to do this in reverse, to perceive *wholes*, in the manner that a baby perceives everything and nothing at once, and to break down these wholes into units through powers independent of its sense-impressions.

Rather like Hobbes, Hume attacked the fundamental principles of human understanding in order to clear the way for his pronouncements upon moral and social issues. And as with Locke, they in their turn called into doubt his empirical philosophy: the assumptions upon which doubt is thrown in Hume's empiricism are often admitted without question in his political philosophy: as for example, the reality of the self. The self which cannot be demonstrated to exist is, in Books II and III of *A Treatise of Human Nature*, considered in terms of motives of self-love, sympathy with other

¹ Loc. cit. (Vol. II, p. 319).

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souls, and union in society. To the world of philosophy it is Books I and II which have revolutionary force: to Hume they were rather the necessary preliminaries of his more important works upon 'The Passions' and 'Morals'.

Nevertheless, his theory of passions and morals is derived logically, in his own view, from his empiricism. For example, he denies that a distinction can be made between good and evil by reason. A moral decision leads to action: it must have the will or passion behind it. But reason is inert: it can never lead us 'either to prevent or produce any action or affection'. The passions and volitions are outside its ken altogether. At the most reason may throw light upon a course the passion has already decided upon, and aid its accomplishment: or reason may expose moral turpitude, but it cannot invent it. Before the turpitude could be discovered it had to be there, existing independently of the reason.

'Our superior reason may serve to discover vice or virtue, and by that means augment the blame or praise: but still this discovery supposes a separate being in these moral distinctions, and a being which depends only on the will and appetite, and which, both in thought and reality, may be distinguished from reason.'¹ And in this, of course, Hume denies the doctrine of the Cambridge Platonists of a moral law outside man reducible to axioms like those of geometry, and the proper subject of a moral science. For Hume there can be no such science (though he speaks in general terms of a science of man) but there can be a psychology. Morality is subjectivity: it is the result of a feeling. There is no wrong in the objective situation in external nature. It is *within* him that man *feels* right or wrong. Hume uses the distinction between animal and human incest to show that morality is a subjective experience rather than an objective fact. Whence does this moral sense come? From nature? Here it depends upon how we define that ambiguous word. Hume prefers to say that 'virtue is distinguished by the pleasure, and vice by the pain, that any action, sentiment, or character, gives us by the mere view and contemplation. This decision is very commodious.'²

Yet the pleasure-pain principle has limitations; for self-love is

¹ *Ibid.*, Bk. III, Pt. I, Sec. I (Vol. II, p. 177).

² *Ibid.*, Bk. III, Pt. I, Sec. 2 (Vol. II, p. 183).

pleasure too and 'It is certain that self-love, when it acts at its liberty, instead of engaging us to honest actions, is the source of all injustice and violence; nor can a man ever correct those vices, without correcting and restraining the *natural* movements of that appetite.'¹

Hence nature, self-interest, inclination, and even passion are insufficient to explain the given principles of morality. There is a restraint upon the self, independent of pleasure or pain, which is imposed by education and convention. From such restraints and conventions we learn to make a general judgment of character (our own or others') irrespective of the nature of our immediate interests, as when we praise the qualities of an enemy who seeks to injure us. It has relation to *sympathy*, of which he speaks in a fashion which must have commended itself to Rousseau: 'So close and intimate is the correspondence of human souls, that no sooner any person approaches me, than he diffuses on me all his opinions, and draws along my judgment in a greater or lesser degree.'² And he is shrewd enough a psychologist to see that 'This principle of sympathy is of so powerful and insinuating a nature, that it enters into most of our sentiments and passions, and often takes place under the appearance of its contrary. For it is remarkable, that when a person opposes me in anything which I am strongly bent upon, and rouses up my passion by contradiction, I have always a degree of sympathy with him, nor does my commotion proceed from any other origin.'³

These restraints throw light upon the nature of justice, the origin of which has to be sought in an artifice or contrivance which arises from the social situation of men. Here Hume approaches the social contract theory, but does not embrace the more simple varieties of it. He rejects the Hobbesian notion of a state of brutish nature from which men fled in fear into society, equally with the state of innocence described by Jean-Jacques Rousseau in the opening sentences of *Contrat Social*. Nevertheless, he argues that the social life of man involves *some* kind of agreement to accept the restrictions of society:

'This convention is not of the nature of a *promise*; for even

¹ *Ibid.*, Bk. III, Pt. II, Sec. I (Vol. II, p. 187).

² *Ibid.*, Bk. III, Pt. III, Sec. II (Vol. II, p. 287).

³ *Loc. cit.*

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promises themselves . . . arise from human conventions. It is only a general sense of common interest; which sense all the members of society express to one another, and which induces them to regulate their conduct by certain rules. I observe, that it will be for my interest to leave another in possession of his goods, *provided* he will act in the same manner with regard to me.¹

There is a natural urge to live in society, because men are impelled by sex to marry and to bring up families. An elementary society is therefore native to them. The larger society has advantages and disadvantages. A disadvantage is the restriction on individual liberty: advantages are the security and permanence of one's possessions, and the opportunity to add to them. Justice therefore arises from the compromise forced on men by their selfishness and restricted generosity. But it also arises from the scanty provision which nature has made for man. 'Increase to a sufficient degree the benevolence of men, or the bounty of nature, and you render justice useless, by supplying its place with much nobler virtues and more valuable blessings. The selfishness of men is animated by the few possessions we have, in proportion to our wants; and it is to restrain this selfishness, that men have been obliged to separate themselves from the community, and to distinguish betwixt their own goods and those of others.'²

The social and materialist origin of the public virtues advanced here is a striking anticipation of the theory of 'the economic man'—and in particular of Marxist man—and it is not surprising that Hume proceeds, after making it, to a close examination of the morality of property, and only then to the source of the powers of government, and the nature of man's allegiance to it. His conclusions are close to those of John Locke, that when men submit to the authority of others, it is to protect themselves against the wickedness and injustice of men 'who are perpetually carried, by their unruly passions, and by their present and immediate interest, to the violation of all the laws of society'. But those whom we choose to rule us are not made, as Hobbes would assert, into a superior sort of being to whom absolute obedience is due. They are men, like the rest, of strong passions, and power over others gives them

¹ *Ibid.*, Bk. III, Pt. II, Sec. II (Vol. II, p. 195).

² *Ibid.*, Bk. III, Pt. II, Sec. II (Vol. II, pp. 199-200).

the opportunity to exercise their cruelty and ambition. History teaches us to expect this, and 'must make us conclude, that we may resist the more violent effects of supreme power without crime or injustice'. We should never entertain such an absurdity as passive obedience.

The determination of the empiricists to reduce the contents and operations of the mind to what is put there by sense impressions raised problems as great for science as for philosophy. Of the reaction of philosophy there can be no doubt. The encyclopaedic brain of Immanuel Kant was jogged into action by the challenge of Hume and much European philosophy since has turned upon their intellectual battle. The impact on Christian theology was as important. If the contents of the mind were received from the senses, and belief was a consequence of custom or fortuity, faiths and morals might be no more than personal (or at the most social) idiosyncrasies. To this view Hume's *Dialogues concerning Natural Religion* (1779) lent weight. Of the reaction of theology there was ultimately to be no doubt either. Yet for neither of them was the attack as serious as upon science. Science, certainly natural science, was based upon observation of cause and effect and the formulation of laws of nature either by induction or deduction, or both. The laws were forms of prediction. If reason is not sovereign here, and laws of nature themselves no more than the results of chance association of ideas, what validity had science? Of course it could be argued that the natural sciences were justified in an empirical way—they produced rough and ready reckonings. But this was at the cost of rejecting the relevance of the *exact* sciences to the natural world. In order to save the sensationalist theory Locke and Hume were forced to conclude that the propositions of mathematics have relevance only to the comparisons of ideas. We do possess a precise standard by which we can 'judge of the equality and proportion of numbers', but that standard is only an inward one. In the exact sciences we have an arbitrary code: we make our own definitions and judge the mathematical solutions we arrive at by their conformity or non-conformity to those definitions. This is another way of saying that mathematics is tautological: that there is no particular point in saying 2 plus 2 equals 4, for nothing is proved if we have rigged both sides of the equation.

The interesting speculation then, is why science made no response to all this. Science (apart from psychology) was not deflected in the least by Hume, though theology and philosophy were. The Newtonian absolutes in mechanics triumphed absolutely, and scientists nowhere appeared perturbed by the possibility that what they perceived was only in their heads, or that the laws they arrived at by induction were incapable of proof.¹ The empiricist attitude to mathematics at least gives us a clue to the indifference of science, for this to scientists was an absurdity which rendered the rest of the empiricist case invalid. For science, mathematics was of the utmost relevance to the natural world, as the mathematical formulations of gravity, or velocity alone could show. And it seemed to scientists that the natural sciences were moving fast in the direction of mathematics, that chemistry would follow where physics led. Physicists, chemists, astronomers, engineers sought all the time to give their laws a mathematical definition and did not feel that they held them fast until they had done so. It was not enough, for instance, to speak vaguely as Boyle did of corpuscles and elements. They needed definition. And when definition came to such elements as molecules and atoms it was in terms of weight, mass, density, mathematically expressed. In fact the progress of science depended upon just the very power of abstraction which Locke, Berkeley and Hume were reluctant to acknowledge. For, as A. N. Whitehead wrote, 'To see what is general in what is particular and what is permanent in what is transitory is the aim of scientific thought'. And again, 'Thus it comes about that step by step, and not realizing the full meaning of the process, mankind has been led to search for a mathematical description of the properties of the universe, because in this way only can a general idea of the course of events be formed, freed

¹ James Stuart Mill wrote in *System of Logic*: 'The notion of Cause being the root of the whole theory of Induction, it is indispensable that this idea should, at the very outset of our inquiry be, with the utmost practicable degree of precision, fixed and determined. If, indeed, it were necessary for the purpose of inductive logic that the strife should be quelled, which has so long raged among the different schools of metaphysicians, respecting the origin and analysis of our idea of causation; the promulgation, or at least the general reception, of a true theory of induction, might be considered desperate, for a long time to come. But the science of the Investigation of Truth by means of Evidence, is happily independent of many of the controversies which perplex the science of the ultimate constitution of the human mind, and is under no necessity of pushing the analysis of mental phenomena to that extreme limit which alone ought to satisfy a metaphysician.' (Vol. 1, p. 358.)

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from reference to particular persons or to particular types of sensation'.¹

In other ways science was making the premisses of eighteenth-century empiricism out-of-date. The *minimum divisibile* of science was to become far and away smaller than the *minimum sensibile* of Berkeley. The microscope suddenly made accessible to the eye a world of reality which had always underlain the world of sensory experience: it was a world not less valid. For the behaviour of the previously unknown bodies of this world, the abstractions of mathematics were invaluable.

Science was victorious in the struggle with scepticism. Perhaps it was not an unnatural consequence of the victory of science that empiricism never recovered from it and in its modern form seeks the subjection of philosophy to science.

¹ *Introduction to Mathematics*, London, 1911, pp. 11, 13.

CHAPTER EIGHT

The Philosophy of Commonsense

JAMES BEATTIE (1735-1803)

IMMANUEL KANT (1724-1804)

THOMAS REID (1710-1796)

DUGALD STEWART (1753-1828)

SIR WILLIAM HAMILTON (1788-1856)

SIR JAMES MACKINTOSH (1765-1832)

There was an odd streak of timidity in Hume. He disliked opposition and criticism and ran away from the consequences of many of his philosophical views. He postponed publication of *Dialogues on Natural Religion* for twenty-five years for fear of being denounced as an atheist, and made provision in his will for its issue posthumously. Not many months before his death he issued an 'Advertisement', which he sent to his publishers, to be affixed to copies of his works still exposed for sale, in which he repudiated *The Treatise* on the ground that 'he had projected it before he left College' and now was 'sensible of his error in going to the press too early. . . . Yet several writers, who have honoured the author's Philosophy with answers have taken care to direct all their batteries against that Juvenile work, which the Author never acknowledged, and have affected to triumph in any advantage which they imagined they had obtained over it; a practice very contrary to all rules of candour and fair dealing, and a strong instance of those polemical artifices which a bigoted zeal thinks itself authorized to employ.'¹

In 1761 he was found lamenting a pulpit attack upon him by a Scottish divine on the grounds that though he had written some ten

¹ *Letters*, Birkbeck Hill, p. 302.

to twelve pages which perhaps exposed him to criticism, he was not rightly denominated an 'infidel writer' when he had written so many volumes entirely inoffensive on that score. 'Is a man to be called a drunkard, because he has been seen fuddled once in a lifetime?' But he was not the first author to be unaware of the revolution he had brought about, and history did not permit the retreat, and brushed aside his pusillanimous apologies. It was the regretted 'juvenile work' which became immortal and in his own day stung the sluggish everywhere like a gadfly. Hume's scepticism was inevitably misunderstood and misrepresented, but he could not complain that it was ignored. Much labour went to the task of confuting it. Dr. James Beattie—that bigotted, silly Fellow, Hume called him—made a vigorous riposte in an *Essay on the Nature and Immutability of Truth* which, published in 1770, became a best-seller. 'Truth! there's no truth in it: it is a horrible large lie in octavo,' scoffed Hume.

Nevertheless Beattie's *Essay* provided the English whigs with the opportunity to dish the Scottish Tory. Every honour was showered upon the latest confuter of atheists—a pension from George III, a doctorate from Oxford, and a portrait by Reynolds. In the Reynolds portrait Dr. Beattie was indeed beatified: tricked out in his academic robes he clasps the *Essay on Truth* to his bosom: beneath him an angel weighs truth in his scales with one hand, while with the other the demons of atheism, Voltaire and Hume, are hurled into outer darkness. The touch of silliness in all this is nicely adapted to the not very profound sentiments of the *Essay*.

The sting which had most effect on the world was that which wakened Kant from his dogmatic slumbers. In the well-known letter he wrote to Dr. Marcus Herz in February 1772,¹ he argued that there was a serious difficulty about the relationship between an object, or what we assume is an object, and that in us which is its representation. If there is nothing in this 'representation' but the effect the object has upon the subject, then one can assume that the representation represents some *thing*. If on the other hand the process is not a passive one, but the representation brings the object

¹ *Apud* A. D. Lindsay, Introduction to Everyman edition of Kant's *Critique of Pure Reason*, p. xiv–xv. The German text is in *Immanuel Kant: Vermischte Schriften und Briefwechsel*. Ed. Kirchmann, Berlin, 1873, p. 403.

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into being 'as the thoughts of God are represented as the originals of things', then, too, there would be an understandable conformity between the object and the presentation of it in the mind. But neither of these simple situations exists, he points out. Our understanding is not the cause of objects: the object is not the cause of the representations of the understanding. There is a hiatus. 'The pure concepts of the understanding, then, cannot be abstracted from the feelings of the senses: they cannot express the abstracted receptivity of presentations through the senses. They must have their source in the nature of the soul, but not so far as it is either affected by objects or brings objects into being.' And in the very first pages of that immense counterblast to Hume, *Critique of Pure Reason*, Kant tentatively assumes the existence of an independent intellectual principle in man:

'That all our knowledge begins with experience there can be no doubt. For how is it possible that the faculty of cognition should be awakened into exercise otherwise than by means of objects which affect our senses, and partly of themselves produce representations, partly rouse our powers of understanding into activity, to compare, to connect, or to separate these, and so to convert the raw material of our sensuous impressions into a knowledge of objects, which is called experience? . . . But though all our knowledge begins with experience, it by no means follows, that all arises out of experience. For, on the contrary, it is quite possible that our empirical knowledge is a compound of that which we receive through impressions, and that which the faculty of cognition supplies from itself (sensuous impressions giving merely the *occasion*), an addition which we cannot distinguish from the original element given by sense, till long practice has made us attentive to, and skilful in separating it. It is, therefore, a question which requires close investigation, and is not to be answered at first sight—whether there exists a knowledge altogether independent of experience, and even of all sensuous impressions? Knowledge of this kind is called *a priori*, in contradiction to empirical knowledge, which has its sources *a posteriori*, that is, in experience.'¹

And so the Kantian battle was joined, of which even to-day the issue is not yet decided. Yet there was an opponent of scepticism

¹ Op. cit., Introduction I. Meiklejohn's translation (Everyman edn., p. 25).

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nearer home than Königsberg, Thomas Reid of Aberdeen, who founded a notable school of Scottish philosophy which was to have profound influence during a period when philosophy and metaphysics in these islands were not otherwise distinguished—seemed rather to have been extinguished by Hume. Thomas Reid (1710–1796) was the son of a minister at Strachan in Kincardineshire. He became librarian at Aberdeen University, where he had graduated. He founded the Aberdeen Philosophical Society—‘The Wise Club’—of which the famous Dr. Beattie was a member. In 1752 he became Professor of Philosophy at King’s College, Aberdeen, and in 1764 succeeded Adam Smith as Professor of Moral Philosophy at Glasgow. His first important work was *Enquiry into the Human Mind on the Principles of Common Sense* (1764), a readable, pellucid essay which, even though at one point it declines into a pedestrian account of how to cure a squint, deserves to be better known than it is. The second great work was the massive *Essays on the Intellectual Powers of Man* which appeared in 1785. These *Essays* were condensed and ordered from the lectures of more than twenty years, and they amount to a system of critical philosophy which ranks in coherence, though not in originality, with Locke’s or Hume’s.

Reid’s commonsense approach (to-day we should call it *realistic*) begins by questioning the use which Hume makes of *impressions* and *ideas* (or Locke of *ideas*) as the foundation of a philosophical system. Why should not they, too, be subject to the scepticism so vigorously applied to every other department? ‘I beg . . . to have the honour of making an addition to the sceptical system, without which, I conceive, it cannot hang together. I affirm, that the belief of the existence of impressions and ideas is as little supported by reason as that of the existence of minds and bodies. No man ever did, or could offer any reason for this belief. Descartes took it for granted, that he thought and had sensations and ideas; so have all his followers done. Even the hero of scepticism hath yielded this point, I crave leave to say, weakly and imprudently.’¹ Hume makes *impressions* and *ideas* the first principles on which everthing else is built. This is to put them beyond argument ‘for first principles no other reason can be given but this, that, by the constitution of our nature, we are under a necessity of assenting to them’. It is also to

¹ *Enquiry*, Chap. 5, Sec. 7 (1814 edn., p. 139).

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set the philosopher a very considerable task: 'That our thoughts, our sensations, and everything of which we are conscious, hath a real existence, is admitted in this [Cartesian] system as a first principle; but everything else'—and by everything else Reid means substance, self, causation, and so forth—'must be made evident by the light of reason. Reason must rear the whole fabric of knowledge upon this single principle of consciousness.'¹ This love of simplicity for its own sake, he remarks, has produced many a false system and Descartes' *cogito* is much to be blamed.

Reid makes the shrewd point that what the sceptics were unconsciously doing was to hypostatize perceptions. 'Ideas seem to have something in their nature unfriendly to other existences. . . . Since men began to reason clearly and distinctly about them, they have by degrees supplanted their constituents, and undermined the existence of everything but themselves.' Locke forced bodies to give up their secondary qualities to ideas: Berkeley stole their primary qualities: Hume disposed of mental substance as readily as Berkeley had disposed of material, and so spirits, too, surrendered to ideas and left them victorious and alone upon an abandoned field. But what, asked Reid, if *ideas* have cannibalistic tendencies? Philosophers will be out of a job!

'The ideal philosophy' is attacked with urbanity and good sense. But what positively does Reid bring to the debate? He perceives that there is very much confusion over the psychological processes of apprehension. What does go on in reality in the activity of the senses? How, by sight, hearing, sound, touch, and taste do we come to accept a world of objects? In pursuit of this he came near to making the most brilliant retort of all to empiricism, that it had put itself in prison to visual images. At least Reid saw the sensual process clearly enough to dispose of the notion that what we have to decide is whether what is called an *impression* or *idea* is also, as perceived, a real object existing outside the mind. He makes the point skilfully in considering the sensation of smell:

'Suppose a person who never had this sense before, to receive it all at once, and to smell a rose; can he perceive any similitude or agreement between the smell and the rose? or indeed between it and any other object whatsoever? Certainly he cannot. He finds himself

¹ *Ibid.*, Chap. 7, Sec. 3 (p. 460).

affected in a new way, he knows not why or from what cause. Like a man that feels some pain or pleasure formerly unknown to him, he is conscious that he is not the cause of it himself; but cannot, from the nature of the thing, determine whether it is caused by body or spirit, by something near, or by something at a distance. . . . It is evidently ridiculous to ascribe it to figure, colour, extension, or any other quality of bodies. He cannot give it a place, any more than he can give a place to melancholy or joy: nor can he conceive it to have any existence but when it is smelled. . . . It is a sensation; and a sensation can only be in a sentient thing.¹

He makes similar observations about the prick of a sword or a pin in the skin of a man who does not visually apprehend the sword or the pin, and he speaks of the strange sensual world in which a blind man lives. The really important problem is how from these sensations, which are admittedly not identical with the objects which promote them, we come to the commonsense conviction, at the root of Reid's philosophy, of an external nature and an experiencing self. In the *Enquiry* he argues somewhat feebly that these realities are *suggested* to us. Sensation *suggests* to us present existence: memory *suggests* past existence. Any change in nature *suggests* a cause, 'And in like manner . . . certain sensations of touch, by the constitution of our nature, suggest to us extension, solidity, and motion, which are nowise like to sensations, although they have been hitherto confounded with them.'²

This process is a passive one: the faculty of attention, on the other hand, suggests an activity and selectivity in the mind at variance with the notion that the contents of the mind are simply the sum of its impressions. Some impressions are registered, others not. Reid implies (though he does not seem precisely to say so) that perception may be what in its root it means, a grasping, not simply a receiving station. However, he makes no real attempt in the *Essays* to bridge the gap which he himself is widening between sensation and the reality which is signalled by it. 'It is a law of our nature, established by the will of the Supreme Being, that we perceive no external object but by means of the organs given for that purpose. But these organs do not perceive'—they only experience

¹ *Ibid.*, Chap. 2, Sec. 2 (pp. 37-38).

² *Ibid.*, Chap. 2, Sec. 7 (pp. 64-65).

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sensations. 'The eye is the organ of sight, but it sees not. . . . We know how the eye forms a picture of the visible object upon the retina; but how this picture makes us see the object we know not; and if experience had not informed us that such a picture is necessary to vision, we should never have known it. We can give no reason why the picture on the retina should be followed by vision, while a picture on any other part of the body produces nothing like vision.'¹ We are ignorant, in other words, of how a picture of reality is called up by the intervention of sensations (no matter from what sense they come), but we do know that without them there is no apprehension of external objects. It simply is that we have a power given by God.

Sensations are signs of external objects. They are not the external objects themselves but they carry immediate and powerful conviction that these objects exist and possess such qualities of form, colour, texture as our senses read into them, arranged thus and thus in space. This, for Reid and his school, was the undeniable foundation of human experience. To the perceiver *his senses give proof* of a material world. 'To what purpose is it for philosophy to decide against commonsense in this or any other matter? The belief of a material world is older, and of more authority, than any principles of philosophy. It declines the tribunal of reason, and laughs at all the artillery of the logician. It retains its sovereign authority in spite of all the edicts of philosophy, and reason itself must stoop to its orders.'²

From the same source and by the same tokens comes the conviction of personal identity, of the continuing self. Reid appeals to the authority of language in the *Essays*: 'In the perception of an external object, all languages distinguish three things, the *mind* that perceives, the operation of that mind, which is called *perception*, and the *object* perceived. Nothing appears more evident to a mind untutored by philosophy, than that these three are distinct things, which, though related, ought never to be confounded. The structure of all languages supposes this distinction, and is built upon it. Philosophers have introduced a fourth thing in this process, which they call the *idea* of the object, which is supposed to be an image, or

¹ Op. cit., Essay II, Chap. IV, par. xv (1843 edn., p. 74).

² *Enquiry*, Chap. 5, Sec. 7 (p. 133).

representative of the object, and is said to be the immediate object. The vulgar know nothing about this idea.¹

Hume's attack upon the power of the mind to form abstractions is scrupulously examined in the *Essays*. In refuting it, Reid points out that it is absurd to confuse a thing *imagined* with a thing *conceived*. We do not properly understand the power of the mind to form abstractions unless we recognize that it can form conceptions which are not under an obligation to be images of given particulars or individuals.

"The distinction between conception and imagination is real, though it be too often overlooked, and the words taken to be synonymous. I can conceive a thing that is impossible, but I cannot distinctly imagine a thing that is impossible. I can conceive a proposition or a demonstration, but I cannot imagine either. I can conceive understanding and will, virtue and vice, and other attributes of mind, but I cannot imagine them. In like manner, I can distinctly conceive universals, but I cannot imagine them."²

Inevitably John Locke's 'general inconsistent idea of a triangle' comes up for examination again. Reid seeks to show that Locke's belief that the human mind had the power to form abstract ideas, and that this indeed distinguished man from the brutes, was a perfectly sound one. But Locke, he says, did not see that this admission destroyed his doctrine of ideas. Berkeley and Hume saw the inconsistency in Locke's thought, but instead of rejecting the doctrine of ideas from which it sprang rejected instead the power of abstraction, and left no distinction between the intellectual powers of brutes and men.

The objections to 'generalizing' are briefly surveyed and answered, and the distinction between abstract and general conceptions usefully made:

"The whiteness of *this sheet* is one thing, *whiteness* is another; the conceptions signified by these two forms of speech are as different as the expressions: the first signifies an individual quality *really existing*, and is not a general conception, though it be an *abstract* one: the second signifies a *general* conception, which *implies no existence*, but may be predicated of every thing that is white, and in

¹ *Essays*, Essay II, Chap. XII, par. iv (p. 157).

² *Ibid.*, Essay V, Chap. VI, par. x (p. 352).

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the same sense. On this account, if one should say, that the whiteness of this sheet is the whiteness of another sheet, every man perceives this to be absurd; but when he says both sheets are white, this is true and perfectly understood. The conception of whiteness implies no existence; it would remain the same, though every thing in the universe that is white were annihilated. It appears, therefore, that the general names of qualities as well as of other attributes, are applicable to many individuals in the same sense, which cannot be if there be not general conceptions signified by such names.¹

The dedication of the *Essays* is to two young colleagues of the University of Edinburgh, Dugald Stewart, Professor of Moral Philosophy, and James Gregory, Professor of the Theory of Physic there, and it says, 'You who are in the prime of life, with the vigour which it inspires, will, I hope, make more happy advances in this or any other branch of science to which your talents may be supplied.' Seldom can a book of philosophy have been more hopefully and happily dedicated, for Dugald Stewart, who was born in 1753 and as a youth was brilliant enough to substitute for his father in the chair of mathematics at Edinburgh at nineteen, was destined to become the expositor of Reid's philosophy of Commonsense and perhaps to influence an even wider public. We find him among the correspondents of Robert Burns, who speaks of him as one of the 'distinguished champions of genius and learning' and bows to his critical strictures. His lectures and numerous writings maintained the humanist tradition Reid had been defending, during the time when Bentham's utilitarianism was triumphing in the south. Sir James Mackintosh, who was his star pupil, said that 'few men ever lived who poured into the breasts of youth a more fervid and yet reasonable love of liberty, of truth, and of virtue. . . . It may be said that his disciples were among his best works.' And among the more brilliant of these were Lord Palmerston, Sir Walter Scott, James Mill, Sydney Smith and Lord John Russell.

Though Stewart differed from Reid on a number of points, and was more careful than Reid had been not to appeal to the vulgar, he added nothing essential to Reid's doctrines. His principal work was *Elements of the Philosophy of the Human Mind* of which the three volumes were published between 1792 and 1827. Dugald Stewart

¹ *Ibid.*, Essay V, Chap. III, par. ix (p. 327).

SIR WILLIAM HAMILTON

had notable allies: one was Thomas Brown, his pupil, who succeeded him in the Chair of Moral Philosophy, and the other was Sir William Hamilton, perhaps the most learned man of his time. In 1836 Hamilton became Professor of Logic and Metaphysics at Edinburgh and awed a whole generation by his erudition. He wielded great literary influence by his contributions to the *Edinburgh Review*. His principal importance for the history of philosophy lies in the knowledge he acquired of German philosophy, and in particular of the work of Kant, through visits to Germany. Thus he saved English philosophy from the insularity into which it had awkwardly plunged itself after the pyrotechnical international exchanges of the previous century. We shall look at his writings, therefore, in a later chapter.

Sir James Mackintosh, lawyer and publicist, must be counted as one of the Scottish school, though his career was not in philosophy. His defence of France against the attacks of Burke, *Vindiciae Gallicae* (1791) was an important contribution to political controversy of the day. In 1830 he published a *Dissertation on the Progress of Ethical philosophy chiefly during the seventeenth and eighteenth centuries* as a foreword to the seventh edition of *The Encyclopaedia Britannica*. This contained an attack on the utilitarians which roused James Mill, whose famous, but acid, reply was contained in *Fragment on Mackintosh* (1835).

CHAPTER NINE

The Utilitarians—I

ADAM SMITH (1723-1790)

WILLIAM PALEY (1743-1805)

SIR WILLIAM BLACKSTONE (1723-1780)

JEREMY BENTHAM (1748-1832)

ROBERT MALTHUS (1766-1834)

JAMES MILL (1773-1836)

ROBERT OWEN (1771-1858)

The year 1776, in which David Hume died, was a momentous one in British history, for that was the year in which the rebellious American colonists made their Declaration of Independence. The vast social and political forces set in motion on the other side of the Atlantic, especially the experiments of dissenters and Puritans in self-government, were coming at last to maturity. The political ideas born during the English Civil war, and enshrined in the political philosophy of Locke, were working like a yeast in the affairs of men. The American War of Independence, which seemed to promise the downfall of the British Empire, electrified Europe, and proved an important contributory cause of the French revolution.

Yet there were other events, to which the public gave less attention; in 1776 Crompton's mule was invented, one of the series of mechanical inventions which for more than thirty years had been called forth by the new cotton industry which was being created round Manchester. With this new industry the Industrial Revolution really began. In the same year Jeremy Bentham published his *Fragment on Government*, and Adam Smith *The Wealth of Nations*.

ADAM SMITH

These two books were portents of the industrial age which was so soon to transform not simply the English scene, but the entire world. Adam Smith was the creator of the industrial, and Jeremy Bentham of the political philosophy of the new age.

Adam Smith was a Scotsman: he was born in the county of Fife and became Professor of Logic and Moral Philosophy at the University of Glasgow, and ultimately its Lord Rector. A journey to Europe brought him into touch with the lively debates of the French physiocrats and stimulated his interest in what was called in those days *political economy*, that is to say in the relation of industry and commerce to the policies of governments. In the eighteenth century the mercantilist policy still prevailed everywhere: governments took upon their shoulders quite considerable powers of economic direction: they forbade certain exports and encouraged others; they were interested in promoting the import of raw materials but not of completing finished products. Each was anxious to create a favourable balance of trade and to amass reserves of gold and silver. These policies involved quite considerable powers of economic direction, and some government control over actual industrial processes. The new age was already chafing at them: indeed mercantilist theories had dominated our relations with our American colonists and the restrictions and taxation we had placed upon their trade had brought about the fatal clash. Adam Smith gathered together in one work a most prolix criticism of prevalent economic policies, but his masterly skill in showing that the wealth of nations depended upon their abandonment brought the mercantile age to an end.

He was possessed of a unique vision of what the division of labour in industry had brought to mankind:

'Observe the accommodation of the most common artificer or day-labourer in a civilized and thriving country, and you will perceive that the number of people of whose industry a part, though but a small part, has been employed in procuring him this accommodation, exceeds all computation. The woollen coat, for example, which covers the day-labourer, as coarse and rough as it may appear, is the produce of the joint labour of a great multitude of workmen. The shepherd, the sorter of wool, the wool-comber or carder, the dyer, the scribbler, the spinner, the weaver, the fuller,

THE UTILITARIANS—I

the dresser, and many others must all join their different arts in order to complete even this homely production. How many merchants and carriers, besides, must have been employed in transporting the material from some of those workmen to others who often live in a very distant part of the country! how much commerce and navigation in particular, how many shipbuilders, sailors, sailmakers, rope-makers, must have been employed in order to bring the different drugs made use of by the dyer, which often come from the remotest corners of the world! . . . To say nothing of such complicated machines as the ship of the sailor, the mill of the fuller, or even the loom of the weaver . . . if we examine, I say, all these things, and consider what a variety of labour is employed about each of them, we shall be sensible that, without the assistance and co-operation of many thousands, the very meanest person in a civilized country could not be provided, even according to what we very falsely imagine the easy and simple manner in which he is commonly accommodated.¹

From this vision of the *inevitable*, co-operative economic activity of men which no government regulation has to set in motion, Adam Smith proceeds smoothly to the view that there is an autonomous economic activity, which has the force of a law of nature and will produce an economic harmony if it is given liberty to work.

'No regulation of commerce can increase the quantity of industry in any society beyond what its capital can maintain. It can only divert a part of it into a direction which it might not otherwise have gone; and it is by no means certain that this artificial direction is likely to be more advantageous than that into which it would have gone of its own accord.

'Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own advantage, indeed, and not that of the society, which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer that employment which is most advantageous to the society.'²

The self-governing economic process he discovers in society is founded, then, upon natural economic liberty and its guiding

¹ *The Wealth of Nations*, Bk. I, Chap. I (Everyman edn., Vol. I, pp. 10-11).

² *Ibid.*, Bk. IV, Chap. II (Vol. I, p. 398).

principle, self-interest: the discovery condemns restrictive mercantile policies:

'All systems, either of preference or restraint, therefore being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interests in his own way, and to bring both his industry and his capital into competition with those of any other man or order of men.'¹

In the pages of *The Wealth of Nations* the pattern of the classical economy which was to dominate the age of capitalist expansion first emerges in all its clarity—here, fully worked out, we find the doctrine of the importance of the world-wide division of labour, the theory of the operation of the market as the determinant of price, the labour theory of value, the justification of universal competition and free trade. The liberal policy of non-interference in industry and trade which emerges from Adam Smith is summed up in the single phrase—*laissez faire*.

A labour theory of value was inevitable among the economists of the eighteenth century, given the assumptions about natural man with which they began their enquiries. Nevertheless Adam Smith's authoritative definition of it was significant in a work which was a masterly defence of emergent capitalism. It provided the manufacturer of his day, and the liberal and radical philosophies which sprang up to defend him, with an argument against inherited power and wealth, particularly in the land. But by the same token, it provided a weapon against capitalism itself. Indeed, the labour theory of value as enunciated by Adam Smith, and expanded by David Ricardo (1772–1823) in his *Principles of Political Economy and Taxation* into the theory that it is the quantity of labour necessary under the most favourable circumstances to manufacture a product that forms the standard of value, became the basis of the labour theory of value of Karl Marx. In *The Wealth of Nations* Adam Smith describes his theory thus:

'The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it. . . . Labour was the first price, the original purchase money that

¹ *Ibid.*, Bk. IV, Chap. IX (Vol. II, p. 180).

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was paid for all things. It was not by gold or silver, but by labour, that all the wealth of the world was originally purchased; and its value, to those who possess it, and who want to exchange it for some new productions, is precisely equal to the quantity of labour which it can enable them to purchase or command. . . .

'Labour, therefore, it appears evidently, is the only universal, as well as the only accurate measure of value, or the only standard by which we can compare the values of different commodities at all times, and at all places.'¹

And with hardly a change of wording, Adam Smith's mildly-stated theory about the division of the product of labour between the labourer and the capitalist might stand for the theory of surplus value advanced by Karl Marx as the principal moral condemnation of capitalism: Adam Smith wrote:

'The value which the workmen add to the materials, therefore, resolves itself in this case into two parts, of which the one pays their wages, the other the profits of their employer upon the whole stock of materials and wages which he advanced. He could have no interest to employ them, unless he expected from the sale of their work something more than what was sufficient to replace his stock to him; and he could have no interest to employ a great stock rather than a small one, unless his profits were to bear some proportion to the extent of his stock.'²

What conclusions might be drawn from this kind of economic theory we find in the works of a theological utilitarian whose intentions were far from revolutionary—Archdeacon William Paley. Paley is remembered because in his *View of the Evidences of Christianity* (1794) he defends Christian revelation by a brilliant exposition of the evidence of design to be found in the natural and physical worlds. His works were a great moral support for Christians in their struggle against the rationalist tendencies of the times. But in a famous chapter 'Of Property' in *Moral and Political Philosophy* (1785) he wrote the following parable:

'If you should see a flock of pigeons in a field of corn; and if (instead of each picking where and what it liked, taking just as much as it wanted, and no more) you should see ninety-nine of

¹ *Ibid.*, Bk. I, Chap. V (Vol. I, pp. 26, 32).

² *Ibid.*, Bk. I, Chap. VI (Vol. I, p. 42).

them gathering all they got into a heap; reserving nothing for themselves but the chaff and the refuse; keeping this heap for one, and that the weakest perhaps, and worst pigeon of the flock; sitting round and looking on all the winter, whilst this one was devouring, throwing about, and wasting it; and if a pigeon, more hardy or hungry than the rest, touched a grain of the hoard, all the others instantly flying upon it, and tearing it to pieces: if you should see this, you would see nothing more than what is every day practised and established among men.¹

Paley's conclusions were much the same as Adam Smith's—that so unnatural an arrangement could be justified only on the basis of solid social gains. Private property, he held, preserved and increased the produce of the earth and involved a principle of mutuality which prevented constant social war. Nevertheless the not unreasonable conclusion soon to be drawn was that this situation itself was in fact, if not in name, one of war—class war.²

Adam Smith and Jeremy Bentham were, of course, very much under the influence of the science of their age. As far back as Hobbes we can see at work on philosophers and metaphysicians the hope of finding in the affairs of men the same grand simplicities which were then being postulated in physics. Adam Smith, following upon the empiricists, discovered self-interest to be the human economic motive, the guarantor of the autonomy of the economic life, and so became the chief inventor of 'economic man'. Jeremy Bentham exalted the notion of self-interest into a theory of jurisprudence and then into a more general political philosophy which acquired the title of Utilitarianism from John Stuart Mill. He was one of the few English philosophers who can lay claim to the foundation of a school; a school, moreover, of philosophical radicalism at war with all doctrines which stood in the way of the remaking of human institutions.

In the library of University College, London, in a polished cabinet, is the clothed skeleton of Jeremy Bentham. It wears a

¹ Op. cit., Bk. III, Pt. I, Chap. 1 (London, 1819 edn., pp. 68-69).

² It is worth recalling that so essentially conservative a thinker as Edmund Burke in *A Vindication of Natural Society* (1756) drew the conclusion that in a state of nature man's wealth was in proportion to his labours, but that in an artificial society he lived under a contrary law, that those who laboured most possessed least. 'The whole business of the poor is to administer to the idleness, folly and luxury of the rich; and that of the rich, in return, is to find the best methods of confirming the slavery and increasing the burden of the poor.'

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black cutaway coat, tight trousers, frilled shirt and tall straw hat. Bentham's will asked that his well-clad skeleton 'should be displayed when my friends and disciples meet together to commemorate the founder of the greatest-happiness system of morals and legislation'. However it is a wax face which stares at the members of the Bentham Club when they bring out the skeleton to dine with them, for Bentham's mummified head rests in a box at his feet. Yet another of his eccentric ideas was the proposal to embalm one's ancestors and erect them in rows along the carriage drive of one's house.

Bentham was born in 1748, at the beginning therefore of the new age marked by the French Revolution, the American revolution, and the Industrial revolution. He died on June 6th 1832, the day before the royal assent to the Reform Bill, the passing of which marked so certainly the triumph of his views, and of the British middle class, of which he was a member. He was in many ways the most typical intellectual of his age, and perhaps because of that became a considerable international figure. So much was he to dominate the century in which he died that a historian said of him at the end of it that he did not know a single law or reform effected since Bentham's day which could not be traced to his influence. That is the verdict of posterity of which he would have been most proud.

Jeremy was born in a street off Houndsditch. To-day it is a place of gown warehouses, shops and offices in the City of London: then it was a residential neighbourhood for the prosperous. One could walk from it to the fields and gardens of rural Bethnal Green. Jeremy's father was a well-to-do lawyer who had great ambitions for his infant son. He had visions of him as Lord Chancellor and almost from his first cries began to mould the boy for his destiny. Young Jeremy did everything to encourage his papa, and obligingly turned out to be an infant prodigy who was discovered at the age of three, in his own words, 'seated at table—a reading desk upon the table, and a huge folio on the reading desk—a lighted candle on each side, (for it had become dark) and myself absorbed in my studies. The book was Rapin's *History of England*.'¹

¹ *The Education of Jeremy Bentham*, C. W. Everett, New York, 1931, p. 6. 'Rapin' is Rapin de Thoyras, whose voluminous *Histoire d'Angleterre* began to be published in 1724. An English translation by N. Tindal began to appear in 1725.

Jeremy learnt Greek and Latin at his father's knee and at five was scraping away at Corelli and Handel on a miniature violin. At seven he went to Westminster School and heartily disliked it. At thirteen he matriculated and was taken up to Queen's College, Oxford, already so widely read that Locke's *Essay concerning Human Understanding* was among the many books he had mastered, and so rationalist that he experienced a severe attack of conscience over the thirty-nine articles to which he had to adhere as a condition of entry into the college. It is a relief to find that he remained quite human, and still a small boy able to write about his homesickness; 'I wish you would let me come home very soon, for my clothes are dropping off my back; and if I don't go home very soon, to get new ones, I must not go down stairs, they are so bad; for as soon as one hole is mended, another breaks out again; and, as almost all the commoners either are gone for vacation, or will go in a day or two's time, very little business will be going forward. Pray, give me an answer very soon, that I may know whether I am to wear clothes or go in rags. Pray give my duty to grand-mama, and love to dear Sammy, and represent the woful condition of one who is, nevertheless, your dutiful and affectionate son, J. Bentham.'¹

Although Jeremy took his master's degree at eighteen, to his papa's great pride, he was to grieve and disappoint him nevertheless. From Oxford, Jeremy went into law, and that should have been the first step to the Woolsack, but when he was called to the bar he 'found a cause or two at nurse for him, which he did his best to put to death'. He had little interest in the practice of the law and his father was soon lamenting that he would never be anything but 'the obscure son of an obscure attorney'. All Jeremy's reading concerned the roots and principles of law-making; he had not sat under Blackstone at Oxford for nothing. But he could never exert himself over the details of a law practice. Even while at Oxford he had been caught up in the scientific interests of his age, and at Inner Temple spent much of his meagre allowance of £100 a year on materials for various chemical experiments which did little more than raise unholy stinks which got him into trouble with his neighbours. They witnessed to his scientific bent. If the law was to be his subject then he proposed to approach it in the same spirit that

¹ *Ibid.*, p. 31.

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Newton examined the relationships of solid bodies, and with, he began to hope, as profound and revolutionary results for the world.

He had been taught that he was to be great. He began to ask himself—'Have I a *genius* for anything? What can I produce?' The answer to the second question had already been given to him by Helvetius—that legislation is the most important of all professions, for the legislator is both moralist and educator. 'And have I indeed a *genius* for legislation? I gave myself the answer, fearfully and tremblingly—Yes'¹! He argued like this: 'All the principles and measures of law, if they are just and proper now, would at any time have been so, and will be so everywhere, and to the end of time. They will hold good, so long as pleasure is pleasure, and pain is pain; so long as steel wounds, fire burns, water seeks a level, bread nourishes, inanition destroys . . . so long as men derive credit from or fortune from their ancestors, or feel an affection for their children.'

This was the moving sense of vocation which filled him from his first manhood; but for a long time his labour at the principles of law-making got him neither money nor recognition, and to his disappointed father it was a mystery and an infatuation and a matter for grave head-shaking. His first published work, *Fragment on Government*, published anonymously in 1776, caused quite a stir and brought him some powerful friends. Some ascribed the book to Edmund Burke. *Fragment on Government* was described as 'a comment on the *Commentaries*' of Sir William Blackstone whose lectures the infant Jeremy had heard at Oxford. The *Commentaries* were a popular and flattering exposition of the laws of England. To Blackstone all law, whether scientific, social or even municipal derived from the law of God. 'No human laws are of any validity if contrary to this.' Blackstone, like others before him, put forward the view that private property was in the nature of a political expedient rather than a natural right. Property was an acquisition of a title to things by the use of them. He argued for the division of political power between king, lords and commons, and so maintained the theory of the separation of powers which had distinguished Locke's political philosophy. He found in English in-

¹ *Works of Jeremy Bentham*. Ed. J. Bowring, Edinburgh, 1843, Vol. 10, p. 27.

stitutions and laws, a little too easily, 'a direction which constitutes the true line of the liberty and happiness of the community'. Of separation powers he wrote:

'Every branch of our civil polity supports and is supported, regulates and is regulated, by the rest; for the two houses naturally drawing in two directions of opposite interest, and the prerogative in another still different from them both, they mutually keep each other from exceeding their proper limits; while the whole is prevented from separation, and artificially connected together by the mixed nature of the crown, which is a part of the legislative, and the sole executive magistrate.'¹

Jeremy Bentham opposed what he described as the 'fictions' of original contract, and contractual limitations on the powers of the legislature such as are assumed in the doctrine of the separation of powers. He gathered his general doctrine of utility from Hume's destruction of natural law in the *Treatise of Human Nature*, particularly from the third volume, 'Of Morals', in which Hume's political philosophy is expounded. 'I well remember', Bentham wrote, 'no sooner had I read that part of the work which touches on this subject than I felt as if scales had fallen from my eyes. I then, for the first time, learned to call the cause of the People the cause of Virtue. . . . That the foundation of all *virtue* is laid in *utility*, is there demonstrated, after a few exceptions made, with the strongest evidence: but I see not, any more than Helvetius saw, what need there was for exceptions.'²

Bentham appealed from the notion of a divine and natural law (*ius naturale*) from which civil law (*ius gentium*) takes its authority to the law of *utility*, or law as a matter of utility, which he found in Hume. Utility is a matter of *fact*, not of pre-determined principles, though of 'future fact—the probability of certain future contingencies' which men weigh before deciding on any course of action. Really, he was appealing from natural law to *nature*. Nature was for him, as it was for Hume and Rousseau, the sovereign power, and nature herself lodged within man all the determinants he needed for his actions. One needed no higher court of appeal than the natural impulses or instincts of mankind; one needed no law inscribed as it

¹ *Commentaries*, Bk. 1, Chap. 2, Sec. 2 (1830 edn., Vol. I, p. 155).

² *Fragment on Government*, Chap. I, xxxvi note. (*Works*, Bowring, Vol. I, p. 268).

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were for ever on the sky. Into this theory of law as utility we will go in more detail presently.

After the publication of *Fragment on Government* recognition came rather faster in the rest of the world than in Britain. Bentham became an international figure (he himself invented the word 'international') long before fame came to him in Britain. He was made a French citizen in 1792 and actually recorded a vote for Napoleon. Much of his work was first printed abroad, including his most famous work, *Rationale of Punishments and Rewards*, which was published in French fourteen years before its appearance in England. The translator was the well-known French scholar Etienne Dumont, who edited the journal of Prince Mirabeau, *Courrier de Province*. Much of Bentham's first work appeared in its pages and provided Mirabeau with some remarkable material for his speeches.

In his thirty-eighth year Bentham made the grand tour. In Russia Prince Potemkin had set about the creation of an ideal agricultural and industrial community on the steppes of Russia and Bentham's brother Samuel was in charge of the organization of it. All this seemed to promise that rational beginning in community-making which Bentham was continually urging, and he wrote:

'In Russia disquisitions on legislation are not only permitted, but encouraged. Deputies from every province of that immense empire have been convened for the purpose of occupying themselves with that important subject, and, if no specific effect has yet resulted from that magnanimous measure, it has been because the nation's intelligence is yet but young and not because the sovereign was not willing.'¹

Indeed the sovereign seemed very willing for, in true utilitarian spirit Catherine the Great had written: 'There can be but two cases in which an act ought to be forbidden: where the tendency of it is pernicious to such and such individuals in particular and where it is pernicious to the community in general. For the end, the only proper end and object of the law is the greatest possible happiness of those who live under its protection.' And she had displayed the same spirit of enlightenment in all her correspondence with Voltaire, d'Alembert and Frederick the Great: she even made a digest of Blackstone. In 1766 she had summoned a grand com-

¹ *Apud C. W. Everett, The Education of Jeremy Bentham*, p. 153.

mission to Moscow to advise on internal reform and issued to them the famous *Instruction*, her statement of legislative principles. It was while in Russia that Bentham made his entry into the economics of utilitarianism by writing *Defence of Usury*. In 1788, on his return to England, he sought means to make a political career. Disappointed in this, he set to work again on the principles of legislation and in 1789 published his great work *Introduction to the Principles of Morals and Legislation*. He spent nearly a quarter of a century over a scheme for prison reform, the Panopticon, and was embittered by the failure of the government, which had encouraged him, to take it up. He spent the fortune his father left him on it, and an ultimate award of £23,000 by way of compensation from Parliament, hardly repaid him for the time spent on it. Wilberforce wrote about this: 'Poor Bentham . . . dying of sickness and hope deferred. Never was anyone worse used than Bentham. I have seen tears run down the cheeks of that strong-minded man, through vexation at the pressing importunity of creditors and the insolence of official underlings, when, day after day, he was begging at the Treasury for what was, indeed, a mere matter of right.'

Yet Bentham did not die: he lived to be eighty-four. The fame of his *Principles* spread through the world. His great period was to come in the new century. He became a bencher of Lincoln's Inn in 1817: in 1823 he founded the *Westminster Review*, the organ of philosophical radicalism, and gathered round him a school of thinkers and legislators, of whom the most famous was James Mill, the father of John Stuart Mill. Father and son were to carry Bentham's ideas triumphantly forward into the legislation of what was to become Bentham's century and John Stuart Mill, 'godfather' of Bertrand Russell, was to transmit the greatest happiness theory to the most influential philosopher of our own day.

What were Bentham's ideas? Fundamentally, they were quite simple; they were a quantitative analysis of the pleasure-pain principle to be discovered in Hume and Hobbes. The law of utility is defined in this fashion in the opening paragraphs of the *Principles*: 'That property in any object whereby it tends to produce benefit, advantage, pleasure, good, or happiness or to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered.' 'Nature has placed mankind under the gov-

ernment of two sovereign masters, *pain* and *pleasure*. It is for them alone to point out what we ought to do, as well as to determine what we shall do. On the one hand the standard of right and wrong, on the other the chain of causes and effects, are fastened to their throne. They govern us in all we do, in all we say, in all we think: every effort we can make to throw off our subjection will serve but to demonstrate and confirm it. In words a man may pretend to abjure their empire: but in reality he will remain subject to it all the while. The *principle of utility* recognizes this subjection, and assumes it for the foundation of that system, the object of which is to rear the fabric of felicity by the hands of reason and of law. Systems which attempt to question it deal in sounds instead of sense, in caprice instead of reason, in darkness instead of light.¹

Instead therefore of legislating for any other purpose, such as the support of existing institutions or the protection of trade, governments ought simply to legislate to increase the sum of human happiness. 'The greatest happiness of the greatest number' ought to be the aim of good government. Who is to be the judge of happiness? In the last analysis, the individual concerned, so that governments, other things being equal, need only to ask themselves what individuals would demand. Leave the individual alone and he will pursue his own good, that is the law of his nature. The net result of the universal pursuit of individual good, is the greatest common measure of happiness. Government was best when it interfered least. *Defence of Usury* seeks the abolition of laws against usury on the grounds that they interfere with individual freedom. All oppressive and restrictive legislation made it impossible for man to follow his natural bent and so increased the stock of human misery. 'All punishment is mischief: all punishment in itself is evil. Upon the principle of utility, if it ought to be at all admitted, it ought only to be admitted so far as it promised to exclude some greater evil.'

As a scientist, this apostle of individualism and *laissez-faire* wanted happiness to submit to a quantitative measure, and the only measure he could find was money. This led him to assert with

¹ *Introduction to the Principles of Morals and Legislation*. (Works, ed. J. Bowring, Vol. I, pp. 1-2.) The order of the two passages has been reversed in order to place the definition first.

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characteristic philistinism, that 'pushpin was as good as poetry'—that there was no qualitative difference between pleasures.

'If I, having a crown in my pocket and not being athirst, hesitate whether I should buy a bottle of claret with it for my own drinking, or lay it out in providing for a family I see about to perish for want of assistance, so much the worse for me at the long run: but it is plain that, so long as I continue hesitating, the two pleasures of sensuality in the one case, of sympathy in the other, were exactly worth to me five shillings, to me they were exactly equal.

'I beg a truce here of our man of sentiment and feeling while from necessity, and it is only from necessity, I speak and prompt mankind to speak a mercenary language. The Thermometer is the instrument for measuring the heat of the weather: the Barometer the instrument for measuring the pressure of the Air. . . . Money is the instrument for measuring the quantity of pain or pleasure. Those who are not satisfied with the accuracy of this instrument must find out some other that shall be more accurate or bid adieu to politics and morals.'¹

Among the disciples of Bentham was Thomas Robert Malthus, the friend and executor of Rousseau. He believed in human perfectibility through the proper adjustment of laws and social institutions, and saw happiness as the aim of man. But his son, Robert Malthus, took a gloomier view of things and criticized his father's doctrines. His scholarly work, *An Essay on the Principle of Population* (1798) brought a stern realism to bear on contemporary optimism: there were blind forces standing in the way of human betterment, it argued. Of these the growth of population was the principal, for the increase of population was a constant: it could be expressed mathematically as a geometrical progression. In contrast the increase in food resources was no more than arithmetical. Population therefore automatically tended to outstrip food supplies and if this was not obvious to men it was because premature death, famine, disease and war redressed the balance. This therefore was the obstacle in the way of Utopias and other perfect societies, that a struggle for the available means of subsistence was to be discovered at the heart of all societies. A second edition of *Principles of Population* in 1803 modified the original argument to the extent of admit-

¹ Everett, op. cit., pp. 35-36.

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ting that civilization itself could diminish the pressure of population in a humane way, since a civilized morality was itself a check on population. But this was not indeed very much comfort to the nineteenth century, for though morality might be guaranteed to some extent within civilized western societies, little could be done about the swarming east. Malthus's theory became an important part of utilitarian doctrine, restraining any tendency to Utopian socialism, and forming an inescapable element in the intellectual climate of the nineteenth century. Its influence on Darwin will be discussed later. In parenthesis it might be said that the nineteenth century turned out to be, despite the Malthusian nightmare, that which had least need to concern itself with the theory, for improved transport opened up virgin continents and food production increased faster than population. It is our century which has, in all seriousness, to listen to Malthus, for there are few virgin lands left, and global population increases faster than ever.

The most notable of the men close to Bentham was James Mill. Mill was the son of a Forfarshire shoemaker. He made his way to Edinburgh University and distinguished himself as a Greek scholar. He travelled to London in 1802 to live by journalism. He married, took a house in Pentonville and his eldest son John was born there in 1806. There he began to write his monumental *History of India*: upon the publication of this he was given a post in India House. He became a friend of Jeremy Bentham soon after his arrival in London and one of the staunchest advocates of his philosophy. The ascendancy that this unknown but indefatigable young Scotsman secured over the liberal politicians of his day is rather remarkable. He became their voice and conscience, and his hope, like theirs, was concentrated on the rational revision of statutes and institutions now that the ferment of the French Revolution had died down. The peaceful revolution which was the Reform Bill represented the utilitarian spirit of gradualism and compromise. James Mill, in *Elements of Political Economy* (1821), put forward a thesis close to that of the *Wealth of Nations* with the addition of two propositions, one that increases in land values should be taxed, deriving from Ricardo, and the other from Malthus, that means should be found to limit the population. To the psychology of Benthamism—not Jeremy's strong point—Mill made a great contribution with his

Analysis of the Phenomena of the Human Mind (1829). Filled with the passion exhibited by all empiricists to reduce human phenomena to their simplest scientific terms and anxious as a good utilitarian to expose psychologies which might stand in the way of reform, Mill derived all the phenomena of the mind from 'association'. In what is probably the most lucid work on psychology ever written Mill explains that 'association' begins with the association of the 'sensations' which empiricists accept as the indivisible and self-explanatory facts of perception. 'Ideas' were the traces, the after-effects of sensations. 'Association' occurred in trains (successive) or in clusters (synchronous) or in both modes. It was by the merging of clusters and trains of ideas and sensations into nets of associations that our more complex ideas came into existence. 'Thought succeeds thought: idea follows idea, incessantly. If our senses are awake, we are continually receiving sensations, of the eye, the ear, the touch, and so forth; but not sensations alone. After sensations, ideas are perpetually excited of sensations formerly received; after those ideas, other ideas: and during the whole of our lives, a series of those two states of consciousness, called sensations, and ideas, is constantly going on.'¹ Thus memory is the calling up of trains of association through some stimulus of feeling: belief is the calling up of associations experienced as inseparable. And so 'in every instance of belief, there is indissoluble association of ideas'. From such inseparability arises the belief in causation. However he ignores the dilemma of Hume—whether the causation that association compels us to believe in, exists independently of our belief. As for *identity*, all we really experience is 'a thread of consciousness': 'The birth, infancy, childhood, youth, manhood, of a human being, are names for different parts of a certain series of antecedents and consequents. This series is known to me by experience; that is by sensation, by memory, and other cases of association. The life of one man is one series. The life of another man is another series. . . . The memory which I have of my own existence, that is the memory of a certain train of antecedents and consequents, is the Belief of them; on account of which belief, I apply to myself the term same, in the same way as I apply it to any other of my fellow men.'² It

¹ Op. cit., Vol. I, Chap. III (1829 edn., p. 52).

² Ibid., Chap. XIV, Sec. VII (pp. 129-31).

followed for this psychology that training and education were what we should describe to-day as a *behaviourist* process of conditioning: sound education, including moral education, was a matter of forging the right trains of association so that 'good' motives could counteract such 'bad' ones as might be called up in us, at least by recalling to us the consequences of our actions.

Mill's psychological utilitarianism conceived man almost in Newtonian terms, with the contents of his mind mechanically determined by events beyond his control. It denied to the mind any innate content and came close to Bertrand Russell's rejection of the self: the man which emerged was deprived of emotional, unconscious and conative elements. A psychology so completely environmental lent itself all too easily to the materialist tendencies of the age: indeed it expressed them as boldly as Bentham's quantitative measure of pleasure, or Adam Smith's economic man. And it indicated at least one possible path to Utopia. If man was the product of his environment then it should be possible for those who had the power of government to alter the environment in order to produce a different, a better, type of man. This was the thesis which Robert Owen was urging indefatigably upon every one who would listen in those years and was the main support of his Utopian socialism. In *A New View of Society* (1813) this cotton manufacturer who spent more than one trade fortune on the propagation of communism, and whom Leslie Stephen described as 'one of those bores who are the salt of the earth', argued that 'Any general character, from the best to the worst, from the most ignorant to the most enlightened, may be given to any community, even to the world at large, by the application of proper means; which means are to a great extent at the command and under the control of those who have influence in the affairs of men.'¹

He found no difficulty in reconciling utilitarianism with socialism (the union he blessed is unbroken still), for there was one single principle of action, 'the happiness of self, clearly understood and uniformly practised; which can only be attained by conduct that must promote the happiness of the community.' Man has been subject to misery in the past because every past society 'has been formed

¹ 'Essays on the Formation of Character', I, *New View of Society* (Everyman edn., p. 16).

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and governed on a belief in the following notions, assumed as *first principles*:

'First—That it is in the power of every individual to form his own character. Hence the various systems called by the name of religion, codes of law, and punishments. Hence also the angry passions entertained by individuals and nations towards each other.

'Second—That the affections are at the command of the individual. Hence insincerity and degradation of character. Hence the miseries of domestic life, and more than one-half of all the crimes of mankind.

'Third—That it is necessary that a large portion of mankind should exist in ignorance and poverty in order to secure to the remaining part such a degree of happiness as they now enjoy.'¹

He proposed to 'tear off the many-folded bandages' which kept men in blindness. If character is formed for man, not by him, then any community may be arranged so as to withdraw vice, poverty, and misery from the world, and to place every member of it in circumstances of permanent happiness. He was vehemently anti-Malthus, however, and believed that 'nature has provided the means by which the population may be at all times maintained in the proper state to give the greatest happiness'.

It is unmistakably clear, I think, that utilitarianism witnessed to a *bouleversement* of values. The notion of *man* was being progressively emptied. Jettisoned were all concepts of personality which rendered man opaque and difficult to understand. The transparent human being of this naïve utilitarianism was animated by a simple hedonistic principle which his governors could manipulate to change him. It is interesting, even ironical, to notice that socialists of every school took over without question the principle of pleasurable self-interest and have remained ever since most deep in the debt of the very ideology they sought to overthrow.

¹ 'Address at New Lanark', *New View of Society* (pp. 109-10).

CHAPTER TEN

The Utilitarians—II

JOHN STUART MILL (1806-1873)

The greatest contribution which James Mill made to utilitarianism was his son, John Stuart Mill, whose genius was early forced even more thoroughly than Jeremy Bentham's. The marvel was that he survived and rose to be the dominant mind of Victorian England, speaking with equal authority for its science, materialism and rectitude. Was it the strain of Scottish intellectual toughness which carried him through?

John, born in 1806, began learning Greek when he was three, and arithmetic probably soon after. In his eighth year he commenced learning Euclid, Algebra and Latin, read the *Iliad* and taught the younger ones. 'From my eighth year to my twelfth year, the Latin books which I remember reading were, the Bucolics of Virgil, and the first six books of the Aeneid; all Horace, except the Epodes; the fables of Phaedrus; the first five books of Livy . . . all Sallust; a considerable part of Ovid's Metamorphoses; some plays of Terence; two or three books of Lucretius; several of the Orations of Cicero, and his writings on oratory; also his letters to Atticus. . . . In Greek I read the *Iliad* and *Odyssey* through; one or two plays of Sophocles, Euripides, and Aristophanes, though by these I profited little; all Thucydides; the Hellenics of Xenophon; a great part of Demosthenes, Aeschines, and Lysias; Theocritus; Anacreon; part of the Anthology; a little of Dionysius; several books of Polybius; and lastly Aristotle's *Rhetoric*.¹ But this was his compulsory reading under his father's tutorship: he gives in his spiritual *Auto-*

¹ *Autobiography* (World's Classics edn., pp. 9-10).

biography another list of private reading, and a favourite childhood volume was Joyce's *Scientific Dialogues*. Alexander Bain's *John Stuart Mill* (1882) lists other works devoured in his precocity. With his twelfth year new studies of Aristotle began, particularly of his logic, and they were carried on in peripatetic fashion, for John and his father were great walkers and rambled from Pentonville out to the hills of Hampstead and Highgate. Each day, in his walks, John had to give his father an account of what he had read and submit to a searching inquisition about it. Not long after, political economy was added to the curriculum.

'From temperance and much walking.' he relates, 'I grew up healthy and hardy; though not muscular; but I could do no feats of skill or physical strength, and knew none of the ordinary bodily exercises. It was not that play, or time for it, was refused me. Though no holidays were allowed, lest the habit of work should be broken, and a taste for idleness acquired, I had ample leisure in every day to amuse myself; but I had no boy companions. . . .'¹

At the price of acquiring no physical dexterities and few friends he began his intellectual life a quarter of a century in advance of his contemporaries, having in his infancy mastered the authorities usually introduced to students only at the university. He met and talked precociously with his father's companions, Jeremy Bentham, and Samuel Bentham (with whom he spent a year in France), David Ricardo and many others; these were appropriate enough mentors, for the intellectual stoicism imposed by his father was part of the theory of the proper formation of character on Benthamite principles. John was the first-fruit of the new order, but admitted to being a disputatious, conceited, impertinent young fellow. Yet in adolescence he who had been so carefully screened from any Christian education, experienced a conversion to Benthamism religious in its intensity:

'My previous education had been, in a certain sense, already a course of Benthamism. The Benthamic standard of 'the greatest happiness' was that which I had always been taught to apply: I was even familiar with an abstract discussion of it, forming an episode in an unpublished dialogue on Government, written by my father on the Platonic model. Yet in the first pages of Bentham it

¹ *Ibid.*, p. 30.

burst upon me with all the force of novelty. What thus impressed me was the chapter in which Bentham passed judgment on the common modes of reasoning in morals and legislation, deduced from phrases like 'law of nature', 'right reason', 'the moral sense', 'natural rectitudes', and the like, and characterized them as dogmatism in disguise, imposing its sentiments upon others under cover of sounding expressions which convey no reason for the sentiment, but set up sentiment as its own reason. It had not struck me before, that Bentham's principles put an end to all this. The feeling rushed upon me, that all previous moralists were superseded, and that here indeed was the commencement of a new era in thought.¹

At the end of his reading of Bentham he found himself in the possession of 'a creed, a doctrine, a philosophy; in one among the best senses of the word, a religion; the inculcation and diffusion of which could be made the principal outward purpose of a life.' This was the faith to which he devoted himself. He discovered the word 'utilitarian' in Galt's *Annals of the Parish* in the passage where the Scottish pastor round whom the book is written warns his parishioners not to abandon the Gospel and become utilitarians. Mill seized on the word with 'a boy's fondness for a name and a banner . . . and for some years called myself and others by it as a sectarian appellation'. He pursued the cause with youthful fanaticism, founding a little Utilitarian Society of his contemporaries which met at Mr. Bentham's house, and which broke up in 1826.

In 1823, at the age of seventeen, John received an appointment under his father in the East India Company, and stayed with the company for thirty-five years, retiring only when it closed its doors for ever. In 1828 he was promoted to assistant-examiner, and after his father died in 1836 he had control of the relations between the company and the native states of India, which is to say that he was, in some manner, a statesman for twenty years, a long political life. He was promoted chief of the office in 1856. He relates that he felt he could not hope to live by writing, for books of the kind he planned to write, which aim at some deep transformation of thought or opinion, take too long to prepare and cannot justify themselves by large sales. Nevertheless his output was considerable for one who was in permanent and responsible employment. He began writing

¹ *Ibid.*, p. 54.

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in his youth for the *Morning Chronicle* and *Westminster Review*. Of the latter he became eventually editor and proprietor. He published his *System of Logic* in 1843. His official duties did not quell his liveliness and love of debate. He joined societies, particularly the Speculative Debating Society, where he was wounded to discover that he was regarded as an intellectual freak—a 'made man', built to grind his father's tunes. Some years later he met a married woman, Harriet Taylor, and formed a friendship with her and her husband, and upon her husband's death he married her. His married life lasted only seven years, years however of most profound and important work. Mrs. Taylor was a woman of character and charm whose humanizing influence upon Mill was immense, and his tributes to her glow with feeling. She, it seems, it was who roused his interest in the position of women and brought him to write *The Subjection of Women* (1869).

When the East India Company was dissolved in 1858, Mill retired on pension to Avignon, returning only once a year to his house at Blackheath. But he emerged again into public life to enter Parliament in 1865 for Westminster. He took a most active part in debates and made propositions concerning the representation of women and the reform of London government which were far ahead of his time. He was defeated in the General Election of 1868, and his contribution to the election expenses of the atheist Bradlaugh may have had much to do with that defeat. He died at Avignon in 1873, to the last busying himself with social questions.

Mill must rank, not simply as the exponent, but as the *humanizer* of utilitarianism. Throughout his life and writings we find that he is torn between the Benthamite principles on which he believed his faith was firmly founded, and his consciousness of deep and lasting human values which he felt it to be the business of Benthamism to support, not to destroy. This conflict makes his work of the most extraordinary interest. More clearly in Mill than in any other empirical philosopher emerges the conflict between the scientific philosophy he was busy expounding and the human values he felt compelled to espouse. Conflict, for him, began with an acute personal crisis which immediately modified his utilitarianism and began that overthrow of his father's authority which Mrs. Taylor helped him to complete. From the day when, as a fifteen year old

boy, he had been converted to a religious Benthamism, he had decided that his task was the reform of the world. He had even congratulated himself on the certainty of the happy life that this would bring. But five years later he was cast down by an *accidie* almost medieval, or as he put it, he found himself in that state 'in which converts to Methodism usually are, when smitten by their first "conviction of sin"'. He put this question to himself: "Suppose that all your objects in life were realized; that all the changes and institutions and opinions which you are looking forward to, could be completely effected at this very instant: would this be a great joy and happiness to you? And an irrepressible self-consciousness distinctly answered, "No!" At this my heart sank within me: the whole foundation on which my life was constructed fell down. All my happiness was to have been found in the continual pursuit of this end. The end had ceased to charm, and how could there ever again be any interest in the means? I seemed to have nothing left to live for."¹ He blamed his collapse on the severity and aridity of his early education at the hands of his father: this had sharpened his powers of analysis only in the end to erode his capacity for feeling and to leave him torpid and joyless. He feared he would never *feel* again, and without feeling (it is his own metaphor) he was in possession of a well-equipped ship and rudder, but no sail. The somewhat bitter portrait of his father in his *Autobiography* lights up his personal crisis:

'He never varied in rating intellectual enjoyments above all others, even in value as pleasures, independently of their ulterior benefits. The pleasures of the benevolent affections he placed high in the scale; and used to say, that he had never known a happy old man, except those who were able to live over again in the pleasures of the young. For passionate emotions of all sorts, and for everything which has been said or written in exaltation of them, he professed the greatest contempt. He regarded them as a form of madness. "The intense" was with him a by-word of scornful disapprobation.'²

His father thought life at best a poor thing, and despite his Benthamism was even pessimistic as to how far it might be made better. He was a typical Englishman, John said, and hated to show

¹ *Ibid.*, p. 113.

² *Ibid.*, p. 41.

his feelings. John's father's relations with his children lacked tenderness, and while John himself respected his father, he was too much in awe of him to love him. Poetry, above all Wordsworth's poetry, helped John to recover from a despair which threatened his reason and made him ask whether he was bound to go on living.

'What made Wordsworth's poems a medicine for my state of mind, was that they expressed, not mere outward beauty, but states of feeling, and of thought coloured by feeling, under the excitement of beauty. They seemed to be the very culture of the feelings which I was in quest of. In them I seemed to draw from a source of inward joy, of sympathetic and imaginative pleasure, which could be shared in by all human beings; which had no connection with struggle or imperfection, but would be made richer by every improvement in the physical or social condition of mankind.'¹

The addition of a doctrine of feeling to his childhood credo, in defiance of his father's point of view, made him question his father's educational methods. He argued that there must be profound weaknesses in training by associations of pain and pleasure, and even that 'there must always be something artificial and casual in associations thus produced'. He did not abandon the theory that happiness is the test of all rules of conduct 'and the end of life', at least not in so many words, but he began to lay emphasis on inner cultural processes and to owe much to Coleridge and his school whose philosophy was anathema to utilitarians. He so modified the general theory of Bentham as to conclude that the *direct* pursuit of happiness is a mirage. 'Those only are happy (I thought) who have their minds fixed on some object other than their own happiness. . . .' So deeply did this lesson bite into him that at the conclusion of his *Logic* he wrote: 'I fully admit this is true: that the cultivation of an ideal nobleness of will and conduct, should be to individual human beings an end, to which the specific pursuit either of their own happiness or that of others (except so far as included in that idea) should, in any case of conflict, give way.' That seems a plain enough appeal to motives beyond hedonism. Yet, alas, he goes on in a circular argument to justify the abandonment of the search for happiness on hedonistic principles! 'Elevation of character itself is to be decided by reference to happiness as a standard.' This can only mean that

¹ *Ibid.*, p. 125.

the abandonment of the pursuit of happiness in favour of nobleness of conduct can only be determined in the degree that it yields happiness. 'The character itself should be, to the individual, a paramount end, simply because the existence of this ideal of nobleness of character, or of a near approach to it, in any abundance, would go further than all things else towards making human life happy. . . .'¹ If one follows him so far without bewilderment one still must ask—yes, but in circumstances where it does not make human life happy, which is to be preferred, the pursuit of happiness, or of nobleness?

There are many more passages which suggest that John Stuart Mill had relegated happiness to the role of a by-product—or else that the nobility of his own character would not permit him without protest to remain subject to naked doctrines of expediency and self-interest, or to the vulgar equation which Bentham made between money and happiness.

In the essay *Utilitarianism* (1863), originally published in *Fraser's Magazine* two years before, Mill asserts that he adheres to the Greatest Happiness theory, however, and sets out to expound and develop it. Plausibly he argues nevertheless for the *social* character of Benthamism as against its individualism. The standard is not the agent's own standard, not his own happiness 'but the greatest happiness altogether; and, if it may possibly be doubted whether a noble character is always happier for its nobleness, there can be no doubt that it makes other people happier, and that the world in general is immensely the gainer for it.' If I should accept, say, my misery so long as it makes others happier, what becomes of the pleasure-pain principle of conduct? Benthamism is greatly confused by this social orientation which Mill gives it, for there is a far-reaching difference between personal pursuit of happiness in the serene confidence that this leads to general happiness, and the subjection of personal conduct to a *social* judgment upon it. The simple guide has suddenly gone. And not many furlongs along this road one reaches the conclusion that pleasure and pain are not reliable guides to general happiness: that the social good or the general happiness may sometimes be better reached by what gives us individually pain than by what individually gives us pleasure.

¹ *System of Logic*, 4th edn., Vol. 2, p. 530.

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Mill was superior in breadth of vision to his father or Jeremy Bentham, and so perhaps this constant appeal to goods or values beyond utility or expediency is not surprising.

The test case for Mill is *justice*. It is idle to advance theories of utility if thereby, in the common connotation of the word, justice will not be established. He deals with the problem in the chapter 'On the Connection between Justice and Utility' in *Utilitarianism*. 'The greatest happiness of the greatest number' is on the face of it, itself an appeal to justice. 'And justice,' Mill asserts, 'is the name for certain classes of moral rules, which concern the essentials of human well-being more nearly, and are therefore of more absolute obligation, than any other rules for the guidance of life.'¹ It follows that an absolute, or near-absolute justice must be found. How then is justice to be defined? Two essential ingredients in it are the desire to punish or take revenge on a person who has done harm, and the knowledge or feeling that harm has been done to some definite individual or individuals. Justice is defined negatively therefore as the impulse to punish one who has offended our codes. It has two sources, *self-defence* and *sympathy*. But obviously the sentiment of retaliation against one who inflicts injuries on us has nothing *moral* about it. What then is *moral*? 'What is moral is, the exclusive subordination of it [retaliation] to the social sympathies, so as to wait on and obey their call. For the natural feeling would make us resent indiscriminately whatever any one does that is disagreeable to us; but when moralized by the social feeling it only acts in the directions conformable to the general good: just persons resenting a hurt to society, though not otherwise a hurt to themselves, and not resenting a hurt to themselves, however painful, unless it be of the kind which society has a common interest with them in repression of.'²

The stick may be picked up from the other end. The individual who has suffered no hurt may rush to defend others who have. But if I am the person who has suffered, and expect the defence of society, what is it that I expect society to defend? Mill's answer is, that I have *rights*. But a *right* is really the form in which the two elements of justice clothe themselves. 'To have a right, then, is, I conceive, to have something which society ought to defend me in

¹ Op. cit., Chap. 5 (*The English Utilitarians* by J. Plamenatz, Oxford, 1949, p. 223).

² Ibid., Chap. 5 (p. 215).

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possession of. If the objector goes on to ask, why it ought? I can give him no other reason than general utility. . . . The interest involved is that of security, to every one's feelings the most vital of all interests.¹

Yet the emphasis upon the social nature of justice, and of sympathy as that which calls it into action, really resolves justice into that which is expedient or useful to society as a whole. In criticism therefore it may be urged that by such a definition justice may seem to be done in a utilitarian sense, though injustice may be thereby committed in a human sense. For example, the majority in a society may inflict punishments upon a minority simply because it is a minority and earns the disapproval of the majority. The disapproval is a thoroughly social act which can secure the support of the individual because of his sympathy with, and wish to defend, society. The society may feel that in some sense it is threatened by the existence of a minority within it, even though that minority has been guilty of no overt act against it. Exactly so the Nazis argued about the German Jews in their country: precisely so the Communists justify crimes against the bourgeoisie in their midst. And if justice *is* what is expedient to a given society, in what sense can it be argued that what was meted out by Nazis or Communists is not justice?

These were contingencies which John Stuart Mill did not have to face. In fact he did not imagine such things possible. His discourse was cast in the mood of Victorian optimism engendered by belief in 'the moral rules which forbid mankind to hurt one another'. He did not believe in these moral rules any less because they were difficult to establish by utilitarian principles, as the superlative honesty of his own life shows. A story illustrates it. Some years after he quitted the India office he stood for Parliament for the Westminster division—reluctantly submitting to the pressure of friends, we are told. His electoral address informed the public that he had no wish to be a member of Parliament, and could undertake to give no time to local interests if elected. Among other things calculated to scare votes away, he proclaimed to his constituents that women were entitled to representation in Parliament on the same terms as men.

¹ *Ibid.*, Chap. 5 (p. 217).

'In the pamphlet, "Thoughts on Parliamentary Reform", I had said rather bluntly, that the working classes, though differing from those of some other countries, in being ashamed of lying, are yet generally liars. This passage some opponents got printed in a placard, which was handed to me at a meeting, chiefly composed of the working classes, and I was asked whether I had written and published it. I at once answered "I did".'

The wonder, one must suppose, was that he was ever elected.

Mill's *A System of Logic: Ratiocinative and Inductive* was published in 1843 and revised many times. Apart from a textbook by Richard Whateley, *Elements of Logic* (1826), little attention had been paid to the subject since Locke. Indeed, logic was still understood to be Aristotelian logic and it did not seem that much could be added to its well-founded principles. After postulating exhaustively his own theories of names, propositions, definitions and syllogisms Mill laid his work aside for a number of years. When he returned to it the landscape had been enriched by significant figures: Comte had published his *Cours de Philosophie positive* (1830), Herschel his *Discourse on the Study of Natural Philosophy* (1830), while in 1837 came William Whewell's *History of the Inductive Sciences*. The intellectual impulse behind these works was recognition of the rising prestige of science and of the need to appraise its findings and to bring its methods into relation with the traditional problems of philosophy. They had very great influence on the third and fourth books of Mill's *Logic*. Mill's own aim is plainly displayed in the subtitle of the work which is described as 'Being a connected view of the principles of evidence and the methods of scientific investigation'.

The first two books involve a critical and elucidatory examination of the Aristotelian logic, in which his father had trained him, in order principally to establish that logic is not tautological in the sense that mathematics is often held to be tautological: that we are not simply reasoning about our *ideas* of things, but about what we assume are the things themselves. 'When I say that fire causes heat, do I mean that my idea of fire causes my idea of heat? No: I mean that the natural phenomenon, fire, causes the natural phenomenon, heat.' Mill goes on to argue that 'the notion that what is of primary

importance to the logician in a proposition, is the relation between the two *ideas* corresponding to the subject and predicate, (instead of the relation between the two *phenomena* which they respectively express,) seems to me one of the most fatal errors ever introduced into the philosophy of Logic; and the principal cause why the theory of the science has made such inconsiderable progress during the last two centuries.¹

Only when it has been established that logic is not word-spinning but a method of arriving at proof about reality is it possible for Mill to embark upon his own contribution to the subject, the logic of induction. He does so without any intention of contrasting deduction and induction to the disadvantage of the former. He argues that there are weighty reasons for giving every science the character of a deductive science as soon as possible. Indeed 'all sciences tend to become more and more Deductive [but] they are not therefore less Inductive; every step in the Deduction is still an Induction. The opposition is not between the terms Deductive and Inductive, but between Deductive and Experimental.'²

What then is induction? It is a process of inference from established instances to all other identical cases. The general proposition which results from a process or chain of induction must contain 'more than the sum of the special propositions from which it is inferred'. He argues for instance that if we say that all animals have nervous systems and we mean no more than all known animals have nervous systems, no induction is involved. We are dealing with evidence of the same order as 'water is wet', and no inference is involved beyond the evidence. If on the other hand we mean to infer that a nervous system will be found 'even in animals yet undiscovered', that is induction. He involves himself in debate with Dr. Whewell, author of the *History of the Inductive Sciences*, over what precisely was involved, for example, in Kepler's discovery of the elliptical orbits of planets. Was this induction? According to Whewell, yes—for Kepler, after gathering the evidence, then conceived the planetary orbits to be identical with an ellipse. He added, therefore, something new to the facts. But, argues Mill, he did no such thing. The ellipse was *demonstrated* by the evidence. If a sailor

¹ 4th edn., Vol. I, p. 98.

² *Ibid.*, p. 247.

sails round a coastline and discovers that he has sailed round an island, this is a mere process of discovery and not less so because the sailor was unable to see the whole of the island at one glance. The evidence added itself up eventually before his eyes. There was no process of inference: simply (he takes the phrase from Dr. Whewell), the Colligation of Facts. Kepler plotted the course of the planets and their orbits turned out to be ellipses: Mill denies that this kind of process can be called induction. As a matter of fact Mill is not on very strong ground here, for Kepler had to make large assumptions even about the nature of the evidence in front of him: as that for instance *if* the observer were in a fixed position from a planet, *and* at such a distance that he could observe the whole of its orbit, he would *then*, under conditions given for the comprehension of its behaviour, discover it to be an ellipse. Such assumptions seem to be of the nature of inference from evidence which does not present itself in the form of an ellipse, but has to be reduced to it.

Yet the lively discussion of what is, after all, a border-line case does bring home the point which Mill seeks to make: that induction is more than simple enumeration: it is the process of deriving general laws or propositions from the evidence. "The scientific study of facts may be undertaken for three different purposes: the simple description of facts; their explanation; or their prediction: meaning by prediction, the determination of the conditions under which similar facts may be expected again to occur. To the first of these three operations the name of Induction does not properly belong: to the other two it does."¹ The process of inferring the general from a number of particulars is, for Mill, not a guess but a matter of proof. Induction *is* proof: but it needs the appropriate test of proof: that is, it must be supported by inductive logic. This then is the basis of his demand for the widening of logic to include and support laws scientifically arrived at.

There is implied in induction an assumption about the nature of the universe itself—that it is an orderly universe and subject to definable laws; that what has happened once will happen again given identical circumstances. "This, I say, is an assumption, involved in every case of induction. And, if we consult the actual course of nature, we find that the assumption is warranted. The

¹ *Ibid.*, p. 328.

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universe, so far as known to us, is so constituted, that whatever is true in any one case, is true in all cases of a certain description.¹

If what determines one case will determine identical cases it follows then that the notion of a *Cause* is at the root of the whole theory of induction. Of the somewhat elevated way in which he dismissed the thesis of Hume (as being concerned with *efficient* causes while science was concerned with *physical* ones) we have already taken note.² Nevertheless the problem is still infinitely complicated. For why single out one antecedent, probably the most proximate, and define that as the cause? Philosophically, it has no justification. 'The cause, then, philosophically speaking, is the sum total of the conditions, positive and negative taken together; the whole of the contingencies of every description, which being realized, the consequent invariably follows.'³ It is possible to list causes which may be described as *permanent*, and so reduce the field of enquiry. The sun, the earth, the planets, with their various constituents Mill describes as permanent causes of the events we witness. Such causes are not always *objects*, but may be *events* such as the rotation of the earth. But no science, and indeed no ordinary knowledge, can be based upon a theory of causation which is compelled to take account of *everything* which previously existed or occurred as the cause of any thing which at this moment comes into existence. Distinctions have to be made. Defined effects have to be linked with defined causes, and not arbitrarily, but in such a way as to be susceptible to proof. And this involves analysis: the complex uniformity must be reduced to simpler and classifiable uniformities. Mental analysis—the decomposition of chaos into separate facts—is indispensable as a first step. It is a natural one, too, for it is by mental analysis that men arrive in the ordinary way at the manifold discoveries which enable them to live, as that rain makes crops grow, or that the west wind brings rain. To observe is a necessary human function. But to ascertain causes so exactly as to reduce them to laws, *experiment* is also needed—especially where the situation is so complex as not to permit Newtonian deductions. The difference between *common observation* and *experiment* is considerable, as

¹ *Ibid.*, p. 337.

² Chap. 7, page 160 above Footnote.

³ *Ibid.*, p. 365.

this example shows: 'Now let anyone consider what amount of knowledge of the effects and laws of electric agency mankind could have obtained from the mere observation of thunderstorms, and compare it with that which they have gained, and may expect to gain, from electrical and galvanic experiments. This example is the more striking, now that we have reason to believe that electric action is of all natural phenomena (except heat) the most pervading and universal, which, therefore, it might antecedently have been supposed could stand least in need of artificial production to enable it to be studied; while the fact is so much the contrary, that without the electric machine, the voltaic battery, and the Leyden jar, we probably should never have suspected the existence of electricity as one of the great agents of nature; the few electric phenomena we should have known of would have continued to be regarded either as supernatural, or as a sort of anomalies and eccentricities in the order of the universe.'¹

Experiment therefore adds to the evidence available for induction: it separates the threads and reveals the links: more can be inferred, and inferred more exactly. But it is essential that experiment should be conducted according to the strictest laws allowed by science itself, though it is obvious that strict conditions may be applied more easily to chemical than to biological experiments. And Mill produces finally a series of principles by which evidence is to be judged. They accurately summarize the scientific method and should be contrasted with Sir Isaac Newton's principles. Mill calls them *The Five Canons*:

'1. If two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which alone all the instances agree, is the cause (or effect) of the given phenomenon.

'2. If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance in common save one, that one occurring only in the former; the circumstance in which alone the two instances differ, is the effect, or the cause, or a necessary part of the cause, of the phenomenon.

'3. If two or more instances in which the phenomenon occurs

¹ *Ibid.*, pp. 412-13.

have only one circumstance in common, while two or more instances in which it does not occur have nothing in common save the absence of that circumstance; the circumstance in which alone the two sets of instances differ, is the effect, or the cause, or a necessary part of the cause, of the phenomenon.

'4. Subduct from any phenomenon such part as is known by previous inductions to be the effect of certain antecedents, and the residue of the phenomenon is the effect of the remaining antecedents.

'5. Whatever phenomenon varies in any manner whenever another phenomenon varies in some particular manner, is either a cause or an effect of that phenomenon, or is connected with it through some fact of causation.'¹

It is interesting to note that Mill saw limits to the process of reducing the laws governing phenomena. He did not embrace Descartes' matter and motion as physical ultimates. He did not imagine that it was possible to continue the process of simplification so far: ultimate laws, he argued, cannot be less numerous than the distinguishable feelings of our nature. His sense of the limitations of the scientific method in its application to human beings deeply influenced his approach to the moral sciences, the principles and methods of which he examines in Book VI. The backward state of these sciences could be remedied, he thought, by applying to them the methods of Physical Science: but since induction was often impossible because controlled experiments could not be conducted, human sciences had of necessity to become deductive.

As for morality itself, it was not a science, but an art. He attacks the theory of 'philosophical necessity' which denies free-will, and tilts at the Owenites who argue that man's character is formed *for* him and not *by* him. Nevertheless he is himself forced to argue that 'No one who believed that he knew thoroughly the circumstances of any case, and the characters of the different persons concerned, would hesitate to foretell how all of them would act'.² If we possessed omniscience, then we should have foreknowledge, as God is assumed to have foreknowledge. But this Mill stoutly refused to identify with fatalism: man is not under some secret or

¹ *Ibid.*, Vol. I, pp. 422 *et seq.* For Newton's principles see chap. 3, pp. 86-7 above.

² *Ibid.*, Vol. II, p. 410.

irresistible compulsion to act in certain ways. He may, if he wishes and wills, change his own character, by the same means that his character can be formed for him by others when young. And reverting at this point to a consideration of the ground of his utilitarianism, he argues for *purpose* too, not simply pleasure and pain, as a determinant of human actions. 'A habit of willing is commonly called a purpose; and among the causes of our volitions, and of the actions which flow from them, must be reckoned not only likings and aversions, but also purposes. It is only when our purposes have become independent of the feelings of pain or pleasure from which they originally took their rise, that we are said to have a confirmed character. "A character," says Novalis, "is a completely fashioned will;" and the will, once so fashioned, may be steady and constant, when the passive susceptibilities of pleasure and pain are greatly weakened, or materially changed.'¹

To the profound spiritual forces at work upon Mill his other books give witness, especially his *Political Economy* (1848). More than any other utilitarian he grew conscious of the claims of labour to social justice, and of the limitations of individualism. The first edition of *Political Economy*, published in the revolutionary year, 1848, which saw the birth of the *Communist Manifesto*, contained sympathetic references to socialism. The 1849 edition extended them. 'I cannot think it probable,' he wrote, 'that they [the working classes] will be permanently contented with the condition of labouring for wages as their ultimate state. . . . ' I cannot conceive how . . . the majority of the community will for ever, or even for much longer, consent to hew wood and draw water all their lives in the service and for the benefit of others.'² The influence of Owen and Louis Blanc, and of the Christian Socialist movement, in whose ranks Mill counted many friends, particularly Frederick Denison Maurice, is to be found in the prophetic chapter 'On the probable futurity of the Labouring Classes' in which Mill spoke of socialism as one of the irrevocable elements in European politics and recommended co-operative associations of the type that the Christian Socialists were already seeking to establish. Indeed, he had moved, by the end of his life, to a qualified socialism and worked for those

¹ *Ibid.*, Vol. II, p. 417.

² *Op. cit.*, Bk. IV, Chap. 7 (1891 edn., pp. 503, 510).

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measures of social justice which might avert, he hoped, the coming struggle between labour and capital. His own life witnessed therefore to that tendency, of which I have already spoken, of utilitarianism to move away from its parent individualism and to attach itself to collective theories.

Of the remaining works of Mill the most important is his *Examination of Sir William Hamilton's Philosophy* (1865) which raised to the nth power all the acute controversies between Kantian thought on the one hand and the traditional assumptions of British empiricism on the other. It gave birth to an interesting empiricist definition of matter as 'the permanent possibility of sensation'. But the most eloquent and popular of all his works was the essay *On Liberty* (1859) which argued that only self-protection, collective or individual, justified any interference with the liberty of action of any man. Thus was established in philosophical form the great liberal *credo* which dominated English political life for the rest of the nineteenth century, though even that great work hesitated to establish personal liberty totally against society.

John Stuart Mill was the apostle of progress. But it is manifest that he regarded progress as the product of the rational powers of man, just as the prophets of the Enlightenment did. Indeed, to the end, Mill retained the eighteenth century cast of thought which Bentham and his father had given him. So that his 'progress' was never the occult theory of necessary evolution which his contemporary Spencer was popularizing. Benthamism seemed to Mill to be, with modifications, the weapon to secure progress, because progress, he conceived, flowed from human effort directed towards specific evils: progress meant for him the remaking of human institutions in a rational manner. This task took priority for him over philosophy itself; he held the view, subsequently to form part of Marxist philosophy, that philosophy is to be judged not in isolation, in terms of whether or not it is true in itself, but in its social consequences:

'Now, the difference between these two schools of philosophy, that of Intuition, and that of Experience and Association, is not a mere matter of abstract speculation; it is full of practical consequences, and lies at the foundation of all the greatest differences of practical opinion in an age of progress. The practical reformer

has continually to demand that changes be made in things which are supported by powerful and widely-spread feelings, or to question the apparent necessity and indefeasibleness of established facts; and it is often an indispensable part of his argument to show, how those powerful feelings had their origin, and how those facts came to seem necessary and indefeasible. There is therefore a natural hostility between him and a philosophy which discourages the explanation of feelings and moral facts by circumstances and association, and prefers to treat them as ultimate elements of human nature; a philosophy which is addicted to holding up favourite doctrines as intuitive truths, and deems intuition to be the voice of Nature and God, speaking with an authority higher than that of our reason. In particular, I have long felt that the prevailing tendency to regard all the marked distinctions of human character as innate, and in the main indelible, and to ignore the irresistible proofs that by far the greater part of those differences, whether between individuals, races, or sexes, are such as not only might but naturally would be produced by differences in circumstances, is one of the chief hindrances to the rational treatment of social questions, and one of the greatest stumbling blocks of human improvement.¹

The ancient, irrational powers of Church and State were the enemies of progress. To them, Mill wrote, 'the march of intellect, which is another word for the progressiveness of the human mind, is a subject of laughter and derision'. And seldom, indeed, has the optimistic doctrine of progress been more eloquently expounded than in this passage from *Utilitarianism*:

'Yet no one whose opinion deserves a moment's consideration can doubt that most of the great positive evils of this world are in themselves removable, and will, if human affairs continue to improve, be in the end reduced within narrow limits. Poverty, in any sense implying suffering, may be completely extinguished by the wisdom of society, combined with the good sense and providence of individuals. Even that most intractable of enemies, disease, may be infinitely reduced in dimensions by good physical and moral education, and proper control of noxious influences; while the progress of science holds out a promise for the future of still more conquests over this detestable foe. . . . All the grand sources, in

¹ *Autobiography* (pp. 232-3).

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short, of human suffering are in a great degree, many of them almost entirely, conquerable by human care and effort.¹

It was this thrilling vision of human progress which stirred the nineteenth century. In France, Auguste Comte's 'Positivism' seemed like an echo of Benthamism and it fascinated and influenced John Stuart Mill by promulgating the orderly stages by which mankind was to advance scientifically from superstition to perfection. It was a dazzling if meretricious vision, and with singularly little criticism or reflection was embodied in the credo of every progressive movement to which the century gave birth, from Robert Owen's co-operative communities to Marxist communism, from the Chartist rebels to the Fabian Society over which George Bernard Shaw and Sidney Webb were to preside.

¹ *Utilitarianism*, Chap. 2 (p. 177).

CHAPTER ELEVEN

Philosophers of Evolution

ERASMUS DARWIN (1731-1802)

HERBERT SPENCER (1820-1903)

CHARLES DARWIN (1809-1882)

ALFRED RUSSEL WALLACE (1823-1913)

THOMAS HENRY HUXLEY (1825-1895)

JULIAN HUXLEY (b. 1887)

HENRI BERGSON (1859-1941)

C. LLOYD MORGAN (1852-1936)

C. D. BROAD (b. 1887)

The eighteenth century was dominated by the physics of Sir Isaac Newton. It was exceedingly convenient to the Age of Reason to be able to lay hold on exact forces, mathematically computed, by which the universe was, so to speak, held in place and kept in motion: it corresponded to the feeling for intellectual propriety that nothing more was needed to describe reality than the findings of the physical sciences plus the notion of a First Cause.

The nineteenth century was in the presence of new and more romantic impulses. Jean-Jacques Rousseau and David Hume had between them dealt a blow at Reason and exalted Nature and Feeling in its place. The romantics often professed to despise man, especially civilized man, as the source of corruption of pure, unspotted Nature: they were moved by the spirit of Wordsworth, who, reflecting upon the nature which 'haunted him like a passion', spoke of himself as:

*well pleased to recognize
In nature and the language of the sense*

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*The anchor of my purest thoughts, the nurse,
The guide, the guardian of my heart, and soul
Of all my moral being.*

Even so eighteenth-century a mind as John Stuart Mill's drew profound spiritual consolation from this. And when men, with the freshness of vision the new biological sciences brought them, turned their attention to the infinite contrivance and miraculous persistence of living things, they felt they divined in Nature, not Newton's inexorable laws, but, to quote Wordsworth again, 'something of a mother's mind': in Nature they recognized a beneficent, fecund, creative and omnipresent power. The sense of something vast and illimitable behind all life was in tune with the romantic mood and helped to determine the intellectual climate of the century. The discovery of the evolutionary cruelties of nature deepened that sense by adding tragedy to it: but it did not destroy it. Young Herbert Spencer, a philosopher we are presently to consider, wrote in sheer admiration of the loving provision of nature:

'Every animate creature stands in a specific relation to the external world in which it lives. From the meanest zoophyte, up to the most highly organized of the vertebrata, one and all have certain fixed principles of existence. Each has its varied bodily wants to be satisfied—food to be provided for its proper nourishment—a habitation to be constructed for shelter from the cold, or for defence against enemies—new arrangements to be made for bringing up a brood of young, nests to be built, little ones to be fed and fostered—then a store of provisions to be laid against winter, and so on, with a variety of natural desires to be gratified. For the performance of all these operations, every creature has its appropriate organs and instincts—external apparatus and internal faculties; and the health and happiness of each being are bound up with the perfection and activity of these powers. . . . Nature provides nothing in vain.'¹

The Newtonian universe prompted awe, or the vertigo of Pascal, in the face of endless space: the busy striving world of nature drew forth, on the contrary, the sympathy and compassion to which more than a century of English nature poetry was to bear witness. Charles

¹ *An Autobiography* by Herbert Spencer, London, 1926 edn., Vol. I, p. 210.

Darwin, a scientist of endless, patient, loving observation, a master and, as he confessed, disciple of that induction which Francis Bacon had urged upon seekers after truth was more than any other man representative of the probing, nature-loving spirit of the century. Nevertheless he was only one of many. His own grandfather, Erasmus Darwin, an eighteenth century writer, anticipating the new mood, broke into many volumes of poetic rhapsody in praise of 'The Loves of Plants' and similar botanical delights with the design: 'to enlist Imagination under the banner of science; and to lead her votaries from the looser analogies, which dress out the imagery of poetry, to the stricter ones, which form the ratiocination of philosophy.'

In *The Economy of Vegetation* occurs a celebrated passage which forecasts a whole century of speculation about cosmic evolution:

. . . 'Let there be light!' proclaimed the Almighty Lord,
Astonish'd Chaos heard the potent word;
Through all his realms the kindling Ether runs,
And the mass starts into a million suns;
Earths round each sun with quick explosions burst;
And second planets issue from the first;
Bend, as they journey with projectile force,
In bright ellipses their reluctant course;
Orbs wheel in orbs, round centres centres roll,
And form, self-balanced, one revolving Whole,
. . . Onward they move amid their bright abode,
Space without bound, the bosom of their God!

The first architect of the philosophy of evolution in England was Herbert Spencer. He was born at Derby in 1820 and came of a family of dissenters and schoolmasters. He was a wilful boy, unwilling to exert himself in learning, and his parents were over-indulgent. As a result his schooling was of the scantiest and down to the end of his life he used to boast that he knew nothing about English grammar and never to his knowledge had a lesson in syntax. His style sometimes confirms it. When he was thirteen his parents took him to Hinton Charterhouse near Bath, carefully concealing from the headstrong boy that they proposed to put him to school with his Uncle Thomas. When Herbert discovered that he

was to stay under a discipline foreign to him, he revolted in a most decided fashion. Corrected for faults and separated from a companion with whom he had quarrelled, he resolved, on a hot summer's day, to go home. In tears of distress, a penny roll in his hand, and two shillings in his pocket, he set out to walk from Hinton to Derby. He managed to find sixpenny beds *en route*, but for the rest kept going on bread and water and three glasses of beer, walking forty-eight miles one day, forty-seven the next and twenty the third. It is typical of him that in his old age he drew biological conclusions even from this escapade—'At an age so far short of maturity, a tax so great necessarily tells upon the subsequent development. The cost has to be met somehow; and is met, no doubt, by a falling short of ultimate perfection of structure.' There was consternation at home and a stern letter from Uncle Thomas: 'Unless his Parents punish him severely, and return him again to us *immediately*, it will not only be *insulting* to us, but *ruinous* to the boy himself.' He was not punished, for he was near nervous collapse, but a fortnight later was amicably returned to Hinton and made his peace.

After a false start at teaching he was offered a job under the chief engineer of the London division of the London and Birmingham Railway and arrived in the metropolis to take up his post on 8th November 1837, happily in time to see the young and as yet uncrowned Queen Victoria drive in state to dine with the Lord Mayor of London on the following day. There followed for Spencer years of the most intense activity in railway engineering, for which he possessed genius. He surveyed tracks, built bridges, planned stations, and in all this his restless, but constructive mind at first found ample scope. He became the inventor of innumerable gadgets (most of which failed to make money)—pins to bind papers, candle extinguishers, and an instrument for measuring the head, called a cephalograph, like the one in which the father of Midshipman Easy accidentally strangled himself, and even, we learn from the pages of his *Autobiography*, invented a flying-machine:

'The proposed patent concerned a scheme for quasi-aerial locomotion: not a "flying-machine" properly so-called, but something uniting terrestrial traction with aerial suspension. . . . Much public attention [had been] given to a flying-machine proposed by a Mr.

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Henson. . . . Representations of it were common in shop-windows; and even pocket handkerchiefs were stamped with them. The essential idea was that of an inclined plane propelled through the air by a motor engine carried on its back—an idea which has recently been revived by the celebrated American inventor, Edison; whose proposed use of it, however, is, if I remember rightly, limited to the carrying of explosive missiles over an opponent army and dropping them into its midst. . . . Adopting the general idea of an inclined plane moving at a high velocity, and supported by the upward pressure of the air reflected from its under surface, my scheme, suggested by the action of a kite when drawn through still air by a boy running, was to attach the ends of the inclined plane . . . to an endless wire rope. . . .¹

Spencer's inventions left no mark and he is important to us because he abandoned practical engineering for political and philosophical speculation. When only twenty-two he set forth in a journal called *The Nonconformist* the arguments about nature already quoted. His first book, on ethics, which he called *Social Statics*, was published when he was thirty, and it brought him useful journalistic connections. It propounds a modified Benthamism: 'If, instead of proposing it as the rule of human conduct, Bentham had simply assumed "greatest happiness" to be the creative purpose, his position would have been tenable enough. Almost all men do in one way or other assert the same. . . . It is one thing, however, to hold that greatest happiness is the creative purpose, and a quite different thing to hold that greatest happiness should be the *immediate* aim of man. It has been the fatal error of the expediency-philosophers to confound these positions.'²

In the same work the doctrine of the inevitable evolution of society first emerges, in association with a theory of organisms:

'Progress, therefore, is not an accident, but a necessity. Instead of civilization being artificial, it is a part of nature; all of a piece with the development of the embryo or the unfolding of a flower. The modifications mankind have undergone, and are still undergoing, result from a law underlying the whole organic creation; and provided the human race continues, and the constitution of things

¹ *Ibid.*, Vol. I, pp. 310-2.

² *Op. cit.*, London, 1868 edn., p. 81.

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remains the same, those modifications must end in completeness . . . so surely must man become perfect.¹

Two years later he began to modify his ideas. Writing about the Malthusian theory he suggested that such a 'struggle for existence' brought about 'the survival of the fittest' and so coined the two phrases which were to summarize the famous Darwinian conception of evolution. It is clear from the passages already quoted that Spencer had long been moving away from Benthamism and was beginning to apply an evolutionary or 'development' principle, as he called it, to many spheres. He had been speculating brilliantly on the degree of subjection of science, of life, morals, and society to 'developmental' laws. When, in 1857, he came to gather together various papers on these subjects he was struck suddenly by the fact that one concept united them all:

'The indefinite idea of progress passed into the definite idea of evolution, when there was recognized the essential nature of . . . change, as a physically determined transformation conforming to the ultimate laws of force. . . . There came the thought that the concrete sciences at large should have their various classes of facts presented in subordination to these universal principles. . . . Clearly the astronomic, geologic, biologic, psychologic, and sociologic groups of phenomena, form a connected aggregate of phenomena: the successive parts having arisen one out of another by insensible gradations, and admitting only of conventional separations. Clearly too, they are unified by exhibiting in common the law of transformation and the causes of transformation. And clearly, therefore, they should be arranged into a coherent body of doctrine, held together by their fundamental kinships.'²

In a visionary way he saw the whole universe marching according to one law of evolution, manifesting itself successively in the explosion of nebulae into solar systems, in the cooling of planets, the upheavals of the crust of the earth, the coming of lowly forms of life, the rise of man, the growth of social systems and the structures of religion and science. He drew up a project for a Synthetic Philosophy. It was to consist of ten tremendous works, beginning with a one-volume exposition of 'First Principles', and then examining

¹ *Ibid.*, p. 80.

² *Autobiography*, Vol. 2, pp. 12-14.

in turn the Principles of Biology, Psychology, Sociology and Ethics in a further nine volumes. This ambitious scheme would show one cause operating throughout creation. Creation? The idea of creation was the first which had to be disposed of, and in *First Principles* and *Principles of Biology* he launched a vigorous polemic against it:

'Those who espouse the hypothesis of special creation, entangled themselves in other theological difficulties. . . . Without dwelling on the question why . . . during untold millions of years there existed on the Earth no beings endowed with capacities for wide thought and high feeling, we may content ourselves with asking why, at present, the Earth is largely peopled by creatures which inflict on each other and on themselves, so much suffering? Omitting the human race, whose defects and miseries the current theology professes to account for, and limiting ourselves to the lower creation, what must we think of the countless pain-inflicting appliances and instincts with which animals are endowed? . . . from the earliest eras geologically recorded there has been going on this universal carnage. . . . Whoever contends that each kind of animal was specially designed, must assert either that there was a deliberate intention on the part of the Creator to produce these results, or that there was an inability to prevent them.'¹

Such were the ideas he was planning to expound in the 1850's. But Spencer was then a man of nearly forty. He depended for his livelihood on his pen or his railway engineering: he had no settled way of life and few resources and he was already a sick man, having lost two years of his life through a nervous breakdown. He could work only three hours a day. How could he possibly tackle this enormous task? Yet he persevered, and in the end secured about six hundred subscribers for a half-crown quarterly philosophical paper—each paper to be, of course, an instalment of the Synthetic Philosophy. He had the backing of Darwin, Huxley, John Stuart Mill and a host of other famous men: and the extraordinary thing is that he completed his self-appointed task, the first English philosopher since Francis Bacon to aim at a universal system of knowledge.

In *First Principles* he attempted to reconcile the conflict between

¹ *Principles of Biology*, London, 1864, pp. 340-1.

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science and religion by an examination of the 'knowable' and the 'unknowable': he proposed agnosticism about ultimate things while asserting that there was a field in which scientific knowledge was possible. His conclusion was a deistic one:

'A Power of which the nature remains for ever inconceivable, and to which no limits in Time or Space can be imagined, works in us certain effects. These effects have certain likenesses of kind, the most general of which we class together under the names of Matter, Motion, and Force, and between these effects there are likenesses of connection, the most constant of which we class as laws of the highest certainty.'¹

But his obvious disbelief in revealed religion, and his polemical style, offended many subscribers: they fell away so fast that Spencer was brought to the point where he could no longer continue his work. Upon the announcement of this John Stuart Mill stepped in with an offer to meet the losses personally and to pay for the printing of the next issue, and he entreated Spencer not to take offence at this help. Spencer called it an act of generosity unparalleled between authors. It was not accepted, for American supporters endowed the work so munificently that a stoppage was averted and the programme went from success to success. Spencer's name became a household word.

At the age of seventy-three he was still labouring away at the general thesis of evolution. By then he could work only ten minutes at a time: friends, music, travel, even reading excited him to a state of collapse.

'Yet this state which I have brought myself to by forty years of brain work. . . . I am impelled to maintain by this desire to continue the task I have undertaken. This architectonic instinct tyrannizes over me. Such more comfortable life as I might lead if I would cease altogether to tax myself, I decline to lead. And this I suppose for the reason that, though more comfortable in one sense, it would be on the whole less comfortable . . . there would be the perpetual consciousness of something left undone which I wanted to do. The weariness would become still worse had I to spend the whole day killing time, with such small means of doing it.'²

¹ *First Principles*, 1911 edn., p. 445.

² *Autobiography*, Vol. 2, p. 454.

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He died in 1903, revered by Britain and America, his life itself a triumph of mind over matter.

In general his evolutionary principle, not very securely based, was that homogeneous substances are not stable, and that there is a constant movement in every part of the universe, among animate as among inanimate things, from uniformity to diversity. This was his well-known principle of *individuation*. This is how he sought to establish it:

"The proposition is not that *all* simple combinations are more stable than *all* complex ones. To establish our inference it is necessary only to show that, as an *average fact*, the simple combinations can exist at a higher temperature than the complex ones. And this is beyond question. Thus it is manifest that the present chemical heterogeneity of the Earth's surface, and of the bodies upon it, has arisen by degrees as the decrease of heat has permitted.' Thus they display 'that destruction of a homogeneous state which results from unequal exposure to incident forces'. He holds this to be just as true in the organic realm. 'Take a mass of unorganized but organizable matter—either the body of one of the lowest living forms, or the germ of one of the higher: both comparatively homogeneous. Consider its circumstances. Either it is immersed in water or air or is contained within the parent organism. Wherever placed, however, its outer and inner parts stand differently related to surrounding agencies—nutriment, oxygen, and the various stimuli. Whether it lies quiescent at the bottom of a pool or on the leaf of a plant; whether it moves through the water preserving some definite attitude; or whether it is in the inside of an adult; it equally happens that certain parts of its surface are more exposed to surrounding agencies than other parts—in some cases more exposed to light, heat, or oxygen, and in other cases to the maternal tissue and their contents. Hence must follow the loss of its original equilibrium.'¹ The one certain law was this breakdown from simple states at high temperatures to the complex combinations to be discovered at low temperatures.

Spencer succeeded in convincing his contemporaries that progress was an invincible law of the universe, only at great cost to ethics; for though evolution was deemed to lead towards harmonious

¹ *First Principles*, pp. 334-5.

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social co-operation, the price paid for it was that 'universal carnage' of which we have already learnt Spencer's views. It was part of Spencer's theory that mankind was just as subject to evolutionary laws as other species, and was moving away from slave societies and military societies in which mass uniformity was the rule, towards the conscious and intelligent individualism out of which comes voluntary co-operation. But even for man there was no escape from the life-and-death rule which governed the brutes. This passage from Spencer's *Man versus the State* shows how he carried his social ethics eventually into complete opposition to the utilitarianism of his friend John Stuart Mill. Spencer was writing of London's 'out-of-works' and 'good-for-nothings':

'Is it natural that happiness should be the lot of such? or is it natural that they should bring unhappiness on themselves and those connected with them? Is it not manifest that there must exist in our midst an immense amount of misery which is the normal result of misconduct, and ought not to be dissociated from it? There is a notion, always more or less prevalent and just now vociferously expressed, that all social suffering is removable, and that it is the duty of somebody or other to remove it. Both these beliefs are false. To separate pain from ill-doing is to fight against the constitution of things. . . . The command "if any would not work neither should he eat", is simply a Christian enunciation of that universal law of Nature under which life has reached its present height—a law that a creature not energetic to maintain itself must die. . . .'¹

The doctrine of 'death to the weak' which Spencer propounded was not only a decided turnabout from that conception of a benevolent nature, which illuminated the first philosophy of evolution, but it was also the negation of all hitherto accepted European morality. This serious change of feeling, which was to affect a century of political speculation from Karl Marx to Adolf Hitler, must be associated also with the theories of one of the mildest men who ever lived—Charles Darwin.

Herbert Spencer was deeply under the influence of Lamarck. Lamarck taught an evolutionary theory which amounted to belief that evolution was an act of will: he once wrote that 'The efforts of

¹ *Man Versus the State* (Thinker's Library edn., p. 23).

some short-necked bird to catch fish without getting himself wet have, with time and perseverance, given rise to all our herons and long-necked waders.' Lamarck stood, in other words, for the inheritance of acquired characteristics, and Spencer was so in love with this theory that even in his old age he gazed at his tiny hands and argued that they were small because for at least two generations past none of his ancestors had done any hard manual labour. Charles Darwin stood for another principle, for a mechanical process of natural selection: the individual organism was blind to the sorting-out process carried on by nature, and could not help on that process, even if made aware of it, by a succession of acts of interior will of the kind that Lamarck postulated.

Charles Darwin was born at Shrewsbury in 1809: he came of Lincolnshire stock. His father, less famous than grandfather Erasmus, was nevertheless of high enough scientific reputation to secure election to the Royal Society. After an unhappy start at Edinburgh University at medicine, Charles went to Cambridge. There he wasted his time, and in his *Autobiography* laments the sporting set he fell in with and with which he spent so much time hunting, shooting, drinking and card-playing. However, he became friendly with men like Dr. Whewell whose writings in inductive philosophy stirred in him a 'burning zeal to add even the most humble contribution to the noble structure of Natural Science'.

Soon after he came down from Cambridge he was offered a post as naturalist to the survey about to be undertaken by the *Beagle*. His father was against the project, but nevertheless said, 'If you can find any man of commonsense who advises you to go I will give my consent'. The whole idea seemed abandoned. But the intervention of Josiah Wedgwood turned the scale: he was the awaited man of commonsense. Darwin senior was also moved to consent by his son's protest 'that I should be deuced clever to spend more than my allowance whilst on board the *Beagle*'. To which his father answered with a smile: 'But they tell me you are very clever.'

Of his appointment Darwin wrote:

'The voyage of the *Beagle* has been by far the most important event in my life, and has determined my whole career; yet it depended on so small a circumstance as my uncle offering to drive me more than thirty miles to Shrewsbury, which few uncles would have

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done, and on such trifles as the shape of my nose. I have always felt that I owe to the voyage my first real training or education of my mind; I was led to attend closely to several branches of natural history, and thus my powers of observation were improved, though they were always fairly developed.¹

Darwin returned to London in 1836 and for two years acted as one of the secretaries of the Geological Society, in close contact with Lyell, whose *Principles of Geology* was a work of great contemporary influence. In 1842 he married a cousin, Emma Wedgwood, and went to live at the beautiful little village of Down, in Kent. His health was already broken by his exposure to the tropics. He suffered from gout and seldom enjoyed unbroken nights, or days without pain. It was against this background that he began his antlike accumulation of evidence about the origin of species and its machinery. He recorded that a fortunate accident put him on the right track:

'In October 1838, that is, fifteen months after I had begun my systematic enquiry [into variations], I happened to read for amusement Malthus on *Population*, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under those circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The result of this would be the formation of new species. Here, then, I had at last got a theory by which to work; but I was so anxious to avoid prejudice, that I determined not for some time to write even the briefest sketch of it.'²

He did not put pen to paper until 1842: even by 1857 he had not made public his theory. In the spring of 1858 Alfred Russel Wallace sent Darwin a paper which contained a complete summary of his own theory. Wallace was born at Usk in 1823 and educated at Hereford Grammar School. He formed a friendship with Henry Bates, who was employed in the Leicester Hosiery business of his father, at the same time that Wallace was teaching in the Collegiate School. Together they made an enterprising excursion to the Amazon and stayed there for several years botanizing. Wallace left

¹ *Autobiography* (Thinker's Library edn., p. 36).

² *Ibid.*, p. 37.

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South America in 1852 and his account of his travels was published in the same year as *Travels on the Amazon and Rio Grande*. A year or two later Wallace went out to the Malay Archipelago and it was while lying ill with fever at Ternate that the bearing of Malthus's theory of population on the origin of species brought the same illumination to him as it had earlier to Darwin. 'There suddenly flashed in me the *idea* of the survival of the fittest, and in the two hours that elapsed before my ague fit was over I had thought out the whole of the theory, and in two succeeding evenings wrote it out in full and sent it by the next post to Mr. Darwin.'

Darwin behaved with magnanimity and was fully prepared to accord the younger man the honours. But friends who knew of his work prevailed upon him otherwise, and the result was a paper read in their joint names to the Linnean Society on 1st July 1858: *On the Tendency of Species to form Varieties, and on the Perpetuation of Varieties and Species by Natural Means of Selection*. Sir Joseph Hooker has recorded that the Fellows were rather overawed by his and Lyell's approval or they would otherwise 'have flown out against the doctrine'.

In November 1859 Darwin's epoch-making *Origin of Species* appeared, and sold out on the day of publication. Spencer's *First Principles* was not published until 1862. But both books were the centre of the debate which raged savagely in all intellectual circles between the evolutionists and the anti-evolutionists. The gist of Darwin's theory was that in all species there is a constant tendency to variation from the central type: some such variations will be unfavourable to survival—such as extra light colouring which makes the organism conspicuous to its enemies—and others will be favourable—one might instance, in insects, a slightly longer wing-span which makes for greater speed and range. The organisms with favourable variations succeed in the struggle for existence, the others die out: hence in time new species are produced, just as breeding-out produces new species of domestic animals. It was not simply by theory that Darwin held the stage: *The Origin of Species* and *Descent of Man* assembled such a mass of well-authenticated evidence that on the whole the scientific world was convinced.

Darwin was aware that his argument that man was descended

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from more primitive creatures was a deadly blow to the hitherto accepted doctrine of man's uniqueness, and in *Descent of Man* (1871) he sought to soften it:

'The main conclusion arrived at in this work, namely that man is descended from some lowly organized form, will, I regret to think, be highly distasteful to many. . . . For my own part I would as soon be descended from that heroic little monkey, who braved his dreaded enemy in order to save the life of his keeper, or from that old baboon, who descended from the mountains, carried away in triumph his young comrade from a crowd of astonished dogs—as from a savage who delights to torture his enemies, offers up bloody sacrifices, practises infanticide without remorse, treats his wives like slaves, knows no decency and is haunted by the grossest superstitions.'

'Man may be excused for feeling some pride at having risen, though not through his own exertions, to the very summit of the organic scale; and the fact of his having thus risen, instead of having been aboriginally placed there, may give him some hope for a still higher destiny in the distant future. . . . We must acknowledge, as it seems to me, that man with all his noble qualities . . . still bears in his bodily frame the indelible stamp of his lowly origin.'¹

The first part of that quotation is pure polemics: it is a most unscientific procedure to plead acceptance of the descent of man from anthropoids on the grounds that the best in animals is better than the worst in man. A proper retort to that kind of reasoning might have been made on the grounds of Darwin's own genius alone, but that the cautious and forbearing Darwin should write in this debased way witnessed to the rising temperature of the whole Darwinian debate by the same time that *Descent of Man* appeared. It left no one quite sane, and certain books, like Edward Clodd's *Pioneers of Evolution* (1897) show a kind of persecution mania and argue that the whole Christian era was one long intellectual conspiracy to suppress the evolutionary theories first advanced by the Greeks. Darwin himself affirmed in *Origin of Species* that 'the struggle for existence' was a large and metaphorical way of speaking justified on the grounds of its convenience, and that, it was hardly proper to apply it indifferently to the 'struggle' of a plant for water, and the

¹ *Descent of Man*, London, 1871, Vol. 2, p. 405.

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'fight' of two animals over food. But to the Victorians, rejoicing in a competitive age, the dramatization of the forces at work in nature was most congenial, and the metaphor won hands down.

It was Thomas Henry Huxley who played the role of dramatist. A writer of light verse, Courthope, wrote about him in *Punch*:

*Eggs were laid as before, but each time more and more varieties
struggled and bred,
Till one end of the scale dropped its ancestors' tail, and the other
got rid of its head.
From the bill, in brief words, were developed the Birds, unless
our tame pigeons and ducks lie:
From the tail and hind legs, in the second-laid eggs, the apes,
—and Professor Huxley.*

Huxley was a surgeon who became lecturer at the College of Mines. His papers on Darwinian theory, *Man's Place in Nature* (1863) became a classic. The regrettable instinct for dramatization comes out in this:

'Who, for instance, has duly reflected upon all the consequences of the marvellous struggle for existence which is daily and hourly going on among living beings? Not only does every animal live at the expense of some other animal or plant, but the very plants are at war. The ground is full of seeds that cannot rise into seedlings; the seedlings rob one another of air and light and water, the strongest robber winning the day, and extinguishing his competitors. Year after year, the wild animals with which man never interferes are, on the average, neither more nor less numerous than they were; and yet we know that the annual produce of every pair is from one to perhaps a million young . . . as many are killed by natural causes as are born every year, and those only escape which happen to be a little better fitted to resist destruction than those which die.'¹

Christian learning took fright. One attack came from Samuel Wilberforce, Bishop of Oxford, in the *Quarterly Review* of July 1860. Wilberforce affirmed 'the principle of natural selection to be absolutely incompatible with the word of God . . . contradicting the revealed relations of creation to its Creator'. It was in June of the

¹ 'The Darwinian Hypothesis' in *Man's Place in Nature and Other Essays*. (Everyman edn., pp. 348-9.)

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same year that Wilberforce and Huxley clashed in a debate in the crowded Museum Library at Oxford, from which fainting women were carried out. The debate is notable now only for the head-on collision between two creeds of life. The Bishop whose sobriquet was 'Soapy Sam', was not perhaps the best fitted to defend his own creed, though he was the most ready. He concluded his speech by asking Huxley whether he was related by his grandfather's or his grandmother's side to an ape. 'The Lord hath delivered him into my hands,' Huxley whispered to a friend when he rose to reply. His retort was:

'I asserted, and I repeat, that a man has no reason to be ashamed of having an ape for his grandfather. If there were an ancestor whom I should feel shame in recalling, it would be a *man*, a man of restless and versatile intellect, who, not content with an equivocal success in his own sphere of activity, plunges into scientific questions with which he had no real acquaintance, only to obscure them by an aimless rhetoric, and distract the attention of his hearers from the real point of issue by eloquent digressions, and skilled appeals to religious prejudice.'¹

Of course, it was this head-on collision which was remembered against the Anglican Church, and held to be proof of its obscurantism. But was it? In the year 1860, *Essays and Reviews*, by Frederick Temple, Rowland Williams, Baden Powell, Benjamin Jowett, Mark Pattinson and others, was published. The views expressed in the innocently-titled symposium threw light on the attitude of the more enlightened divines to the evolutionary controversy, and they bear more weight from certainly having been arrived at before the publication of *Origin of Species*. Frederick Temple, then Headmaster of Rugby, in an essay on 'The Education of the World' (of which the thesis was itself a developmental one—the slow increasing revelation of the spirit in human history) made an eloquent appeal for intellectual liberty within the Church. 'Not only in the understanding of religious truth, but in all exercise of the intellectual powers, we have no right to stop short of any limit but that which nature, that is the decree of the Creator, has imposed upon us.'²

¹ *Apud* Edward Clodd, *Pioneers of Evolution*, London, 1897, p. 197.

² 12th edn., London, 1869, p. 57. This edition marks the passages concerning which charges were brought in the ecclesiastical courts.

Benjamin Jowett said openly that the new speculations concerning 'the chain of animal life' might lead to 'new conclusions respecting the origin of man'.¹ And C. W. Goodwin, in an article 'On the Mosaic Cosmogony' sought to reconcile Genesis with the periods of geological time. Outspoken, too, were the essays on Biblical interpretation by Rowland Williams and Bristow Wilson, and when charges were preferred in the Ecclesiastical Courts against the authors of the book, these two clergymen were suspended for a year. The Privy Council, however, cleared the work of the accusation of heresy, and, indeed, within the next generation the views expressed in *Essays and Reviews* were to become the commonplaces of liberal churchmen. Frederick Temple's role in the matter did not prevent his appointment to the See of Exeter in 1869.

Christian learning, it can now be seen, was then faced with a greater challenge than that which had issued from the science of Aristotle many centuries before, and the dust of the controversy has even yet not settled, as the works of Bishop Barnes make plain.² Looking back we can agree that the opponents of evolutionary theory, though often most foolish in the manner of their opposition, were right in many of their fears. For evolution did raise the most serious ethical questions of the kind demonstrated by that passage of Herbert Spencer's about the folly of keeping the poor alive by charity. Had the Christian not only to admit that the Biblical story of creation was false as fact, but to abandon also his Christian ethic, his sympathy for the underdog, his hope of social peace and harmony which he shared even with such opponents as Utilitarians and Owenites? Were the ethics of the cosmos, if it possessed any, really the ethics of human society? Though Tennyson wrote *In Memoriam* many years before this controversy, nevertheless much of its mood summarizes the growing dismay:

*Are God and Nature then at strife,
That Nature lends such evil dreams?
So careful of the type she seems,
So careless of the single life:*

¹ *Ibid.*, p. 423.

² Cf. *Scientific Theory and Religion* (1933), *Should such a Faith Offend?* (1927) and passages in *The Rise of Christianity* (1947).

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*That I, considering everywhere
Her secret meaning in her deeds,
And finding that of fifty seeds
She often brings but one to bear,*

*I falter where I firmly trod,
And falling with my weight of cares
Upon the world's great altar-stairs
That slope thro' darkness up to God.*

*I stretch lame hands of faith, and grope,
And gather dust and chaff, and call
To what I feel is Lord of all
And faintly trust the larger hope.*

Thomas Henry Huxley showed acute awareness of just this aspect of the controversy and took sides against the more extreme devotees of evolutionary theory. In his Romanes Lecture for 1893, entitled *Evolution and Ethics*, he denied what had been a principle of the romantics and romantic evolutionists ever since the days of Rousseau, that nature was the source of morality. He said, 'the fanatical individualism of our time attempts to apply the analogy of cosmic nature to society. . . . The struggle for existence, which has done such admirable work in cosmic nature, must, it appears, be equally beneficent in the ethical sphere. Yet, if that which I have insisted upon is true; if the cosmic process has no sort of relation to moral ends; if the imitation of it by man is inconsistent with the first principles of ethics; what becomes of this surprising theory?

'Let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it. It may seem an audacious proposal thus to pit the microcosm against the macrocosm and to set man to subdue nature to his higher ends; but I venture to think that the great intellectual difference between the ancient times . . . and our day, lies in the solid foundation we have acquired for the hope that such enterprise may meet with a certain measure of success.'¹

Professor Julian Huxley, grandson of T. H. Huxley, and a

¹ *Evolution and Ethics and Other Essays*, London, 1903, p. 83.

scientist-philosopher in his own right (he is to-day the principal evolutionary philosopher) has defended the more orthodox Darwinian view from time to time. Recently, in an imaginary interview first broadcast and then published in the pages of *On Living in a Revolution* he took his grandfather to task for his belief in such Absolutes as moral values. The rebuke to grandfather goes thus: 'As an evolutionist, I never understood how man, himself a part of nature, could fulfil his destiny by fighting against that same process which gave him birth. . . . Though you did attack and overthrow authoritarian truth and authoritarian morals, the truth and morality which you were discovering and testing were still surely regarded as absolutes. To-day the more philosophical among us prefer to regard science and morality from a relative point of view, as organs of society, varying according to the conditions of the time.'¹

And so the great Darwinian debate goes on in our own day. As a theory Darwinism has suffered some sharp modifications. Natural selection can still be argued to be valid as a means of ensuring the survival of a biological modification or variation once it is introduced into a species: but does it explain the origin of the variation itself? Modern geneticism from the time of the Abbé Mendel onwards would seem to answer no. Mendelian theory, even in its most modern form, successfully demonstrates that variations are produced simply by a re-arrangement of the genes (the carriers, within the germ cell, of physiological determinants) through cross-fertilization: but an alteration in the character of a gene in such a way as to produce a new quality, not simply a recombination of existing qualities, in a living thing, is still regarded as so inherently improbable that the bombardment of the earth by cosmic rays has been seriously posited as a possible cause of mutations or sports. However, against the modifications forced on Darwinism by genetics we have in all fairness to set the larger defence made by Julian Huxley who has discussed these problems fully in *Evolution, The Modern Synthesis* (1942), and elsewhere: 'It is simply untrue to say that his [Darwin's] views have been superseded, in the only sense in which that word can be used of scientific theories—that they have been thrown on to the scrap-heap, outside the main line of

¹ 'An Imaginary Conversation' in *On Living in a Revolution*, London, 1944, pp. 85-86.

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scientific advance. The chief sense in which they have been superseded is a wholly complimentary one, namely that his proof of the existence of evolution has met with such universal acceptance that it is now taken for granted . . . and has become part of the general background of biological thought.¹

And indeed if one considers that evolution is something more than a theory about the survival of variations, one has to admit that his defence is even a modest one, for evolution is now an indissoluble part of the structure of contemporary thinking, and it is typical of the English sense of what is due to a great man that, despite the battle between Church and Science which Darwin began, and which was far from ended at his death, he was buried in Westminster Abbey, last resting place of so many other illustrious makers of English history.

Darwinism has thrown up a whole school of evolutionary philosophers who have added the concepts of Darwin and Spencer to idealism, or to realism, or to the space-time physics of Minkowski and Einstein, as they thought fit. The philosopher with the most remarkable influence in just this field was the Frenchman Henri Bergson (b. 1859) whose theories of creative evolution and of the role of time proved of special importance to Alfred North Whitehead and Samuel Alexander, whose work will be considered presently. Obviously, evolution awards a special role to time. If there is no evolution, if the species were created once and for all as they are at this moment, we have then to reckon with a static creation in which the importance of time is diminished: time remains of significance in the vital or spiritual lives of organisms, and to the one organism who has a history independent of biological change, man; but this significance is of a local rather than a cosmic character, and, if that is the setting of time, its role is a passive one, permitting the play, rather than determining the character, of organisms. Bergson seized upon the importance of time in an evolutionary universe, and of its related biological factor, memory. He attacked mathematical time as merely a sort of space, and substituted real time or *duration* for it. Mathematical time is in a sense an abstraction, a device for considering objectively the subjective

¹ *The Living Thoughts of Darwin*, presented by Julian Huxley, London, 1942, p. 3.

experience of endurance, or duration. Bergson rejected Descartes: *duration, not thought, was the source of being*. 'Je suis une chose qui dure,' he argued, not simply 'une chose qui pense'. In *L'évolution Créatrice* (1907), he expressed, often with extraordinary eloquence, a mystical conception of evolution as a conflict of two opposed principles, *life* and *matter*, in constant collision and uproar and creating out of this conflict the changing universe we know: he saw life as the ascending motion of the universe and matter as the descending one, and a living pattern created as the vital force cuts its way through the descending, undifferentiated matter like shoals of brilliant fish forcing a passage against a turbulent tide. His exaltation of the role of *intuition* and *instinct* over intellect ranks him with the great romantic school ushered in by Hume and Rousseau: perhaps the last great romantic philosopher.

Notable among English philosophers who adopted theories of emergent evolution is Conwy Lloyd Morgan (1852-1936), who, educated in biology under T. H. Huxley, became Professor of Zoology at Bristol University and subsequently its Vice-Chancellor. Lloyd Morgan delivered the Gifford lectures for 1923 at St. Andrews University under the title of 'Emergent Evolution'. They were published in 1926 as *Life, Mind, and Spirit*. In his opening lecture Lloyd Morgan set himself the task of marrying a thorough-going naturalistic interpretation of the universe with a conception of Divine Purpose: 'My thorough-going naturalism takes form in the concept of evolution as emergent and universally applicable throughout nature, including human nature, bodily and mental. But I am one of those who hold that life and mind should not be identified with, but should be distinguished from, spirit. I regard life and mind as manifestations of spirit in an ascending hierarchy of such manifestations. This brings them within the orbit of natural events to be interpreted subject to the methods of naturalism. In accordance with this view, spirit is not a "quality" at the summit of the evolutionary hierarchy. It is that of which *all* qualities, from lowest to highest, are manifestations under conditions of "time and space".'¹

In a manner rather similar to that of Samuel Alexander (see p. 291 *infra*) he argued that each emergent stage is 'supernatural to that

¹ Op. cit., London, 1926, p. 1

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which precedes it'. The prefix 'super' is important: 'The molecular stage is super-atomic; the crystal or colloidal stage is super-molecular; and so on throughout the whole gamut until we reach the aesthetic or the ethical stage as super-cosmic (in Huxley's sense) and the stage of spiritual outlook as super-aesthetic and super-ethical.'¹

He conceived of Divine Purpose as behind *all* advance including spiritual progress, and it is rather significant that he calls to his aid Dr. Rudolf Otto whose *Das Heilige* (1917)² had a very profound influence upon evolutionary philosophers for it enabled them to add 'the religious outlook' to the evolutionary or emergent qualities of man instead of dismissing it (as so many followers of Darwin and Spencer had done) as a superstition, even a sin against the scientific light. Julian Huxley, for example, in *Religion Without Revelation* (1927) takes Otto's subtle exposition of the emergence of the 'numinous' in man as the basis upon which to build a 'religion' of humanity. Though Huxley recognizes and admires a genuine religious spirit in man, he does not believe in a Supreme Being who is to be the proper object of man's worship: that is anthropomorphism. The worship of man has to be given to life, or evolution, or perhaps humanity. But all such efforts to worship vitality—and Albert Schweitzer's philosophy of reverence for life is another example—involve the believer in a painful dilemma: either he is compelled to worship life in all its manifestations, including the basest, or to select, according to some other system of values, just what in life is 'worthy' of being worshipped.

J. S. Haldane (1860–1936), the distinguished biologist, was yet another exponent of a theory of vital activity which justified and witnessed to a universe of spirit through which an immanent God constantly worked. Two important works of his are *Mechanism, Life and Personality* (1913), and his Gifford lectures, *The Sciences and Philosophy* (1929). I incline to put C. E. M. Joad's *Matter, Life and Value* (1929), which marries Bergsonism with Platonic values, in the emergent school; but by the end of his life he had moved far from this position. His *Recovery of Belief* (1932) defends the Christian philosophical position. The statesman Jan Christian Smuts, in

¹ *Ibid.*, p. 306.

² English translation, J. W. Harvey, *The Idea of the Holy*, Oxford, 1924.

Holism and Evolution (1926) and Sir J. Arthur Thomson in his theistic *System of Animate Nature* (1920) both make important contributions to the theories of emergent evolution. To the same gallery belongs C. D. Broad's *Mind and its Place in Nature* (1925), surely the most exhaustive analysis of its kind made in this century. The author's analysis of seventeen types of theory of the relationship of body and mind should not be overlooked by students of philosophy and psychology.¹ Professor Broad comes to the conclusion that the mind is a *compound* thing. He admits a 'psychic' factor as well as a bodily one, and he accepts this 'psychic' factor, not only upon the basis of the normal physical and mental behaviour of human beings, but upon the admissibility of certain paranormal evidence, particularly that for survival after death. There are, in other words, psychic abnormalities which certainly, and psychic normalities which possibly, defy analysis on bodily terms. However, his 'Compound Theory of the Mind' does not reject the ultimate possibility of resolving the psychic factor down to material forces of a kind yet undiscovered. So, in the end, he acknowledges that 'a slightly modified form of Emergent Materialism is compatible with all the well-established supernormal facts, so far as I can see.'²

His conclusions are highly moral ones, though as dispassionately expressed here as are the problems of ethics in *Five Types of Ethical Theory* (1930). Mankind is faced with a threat to mental progress because of the unequal development of the three great branches of knowledge. We have now a high degree of control over inorganic nature combined, alas, 'with our still very rudimentary knowledge of biology and genetics, and with a complete absence of a scientific psychology and sociology'.³ The danger of a great and growing disharmony between man and his environment can only be averted 'by deliberately altering the emotional constitution of mankind, and deliberately constructing more sensible forms of social organisation'.⁴ He calls for a vast development of scientific psychology. Perpetual mental progress, he holds, is not logically absurd, but it is not guaranteed. It is within our own hands. Prophetically, he warns us that we face a race to secure such knowledge and control of life as will enable us to be in time to prevent our chemical and

¹ Op. cit., p. 607 *et seq.*

² *Ibid.*, pp. 664-5.

³ Op. cit., p. 652.

⁴ *Ibid.*, p. 665.

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physical knowledge from wrecking society. He has no means of telling which may win, but 'physics and death have a long start over psychology and life'. The same minatory note is to be discovered in many other works of this genre, for the evolutionary philosophers are on the whole not content with the blind evolutionary pace: they are impatient to transfer the entire business to the proprietorship of man and look to him to rationalize production, speed-up the appearance of new prototypes, and declare higher moral dividends.

All in all, the first thirty years of this century were marvellously rich in efforts to reconcile the doctrines of Darwin and Spencer with the older value-systems of Christian theology, Renaissance humanism, and classical philosophy; and the one great philosophical poem the movement produced, Robert Bridges' *The Testament of Beauty* (1929), neatly summarized the immanentist philosophy common to them all:

*And since we observe in all existence four stages—
Atomic, Organic, Sensuous, and Selfconscious—
and must conceive these in gradation, it was to flaw
in Leibnitz to endow his monad-atoms with Mind.*

CHAPTER TWELVE

The German Philosophers

IMMANUEL KANT (1724-1804)

SAMUEL TAYLOR COLERIDGE (1772-1834)

THOMAS CARLYLE (1795-1881)

SIR WILLIAM HAMILTON (1788-1856)

J. H. STIRLING (1820-1909)

It was the contemporary English philosopher, Bertrand Russell, who once said in a fine fury of alliteration that Immanuel Kant was a mere misfortune who had deluged philosophy with muddle and mystery.¹ And Herbert Spencer related in his *Autobiography* how violently he recoiled from Kant's *Critique of Pure Reason*: on finding it in a friend's house, he commenced reading only to discover that Kant advanced the notion that Time and Space are nothing but subjective forms, pertain only to the consciousness and have nothing beyond the consciousness answering to them. Instantly he threw the book aside. 'Being then, as always, an impatient reader, even of things which in large measure interest me and meet with a general acceptance, it has always been out of the question for me to go on reading a book the fundamental principles of which I entirely dissent from.'²

Perhaps these two criticisms would matter more if Bertrand Russell were not fundamentally an empiricist, and if Herbert Spencer had shown any consistent ability to read. Against them one hardly needs to set the general opinion to the contrary, that Kant is the greatest of modern philosophers. His influence on English

¹ *Outline of Philosophy*, London, 1927, p. 83.

² Op. cit., 1926 edn., Vol. I, p. 253.

philosophy in the second half of the last century was enormous. Kant made an immense reply to David Hume's empiricism in the interests of saving morality and science from extinction by scepticism, but his work is difficult and obscure and everyone finds it heavy going. Yet the main postulates surely emerge. The first is that denial—at which we have already looked—that our knowledge is only 'experience' or 'impressions' or 'perceptions'. There is, Kant said, another element in knowledge: it is something we *bring* to our experience of reality: it is a power to organize and interpret experience. This power he called the *a priori* element in knowledge, that element which enables us to predict that the law of gravity which operated yesterday will operate to-morrow. We know that an apple fell from the tree to the ground yesterday, but how can we possibly 'know' that it will do so to-morrow, when we have not 'experienced' anything which is due to take place to-morrow? Yet if we cannot predict such an event with reasonable certainty then no science, for example, is possible, because there are no ascertainable causes, and therefore no laws of behaviour. Kant explained, in essence, that we fit 'nature' to the laws of our own being. There were, for instance, two forms of intuition—time and space. We never know anything about external reality except in terms of time and space. Time and space are, he said, a framework we fit over the chaotic impressions of our senses, *in order* to make 'sense' of them. This was the notion which aroused Herbert Spencer's wrath. There are certain other principles of understanding, in addition to the intuitions of time and space, which Kant called Pure Conceptions or Categories. These are such conceptions as quantity, quality, substance, relation, causality. Events in the external world are related, for instance, through cause and effect, and the objects we meet are of a certain size, number and discreteness, and possess given qualities like the greenness of a leaf or the rosiness of a ripe apple. These intuitions and conceptions of our minds clothe the naked external world: and it is always the dressed-up 'nature' or 'world' we experience, never the 'world-in-itself' or the 'thing-in-itself'. But Kant did not on that account say that all we know is 'perception': though the world is not experienced independently of our ideas, nevertheless there is an independent world which is the subject of our experience.

SAMUEL TAYLOR COLERIDGE

In the moral sphere Kant laid special stress on the importance of the Will. The Will is not the same as our sensuous or our bodily experience, nor the same as the intellect. If one is willing something, one is willing something that not yet is, but which one feels ought to be. But 'ought' is a factor of which nature, which is completely determined, knows nothing. The Will, then, is *outside* causal nature, and free of it, and is proof that man is a *moral* being, that he, like his Will, is free and not determined, and a being therefore of a world which stands behind natural phenomena.

From Kant stemmed the powerful school of German idealism of which the highlights were Fichte and Hegel. Fichte saw in the ordering of power the Ego of which Kant spoke, the whole meaning of existence, about which he wrote: 'Philosophy teaches us to look for everything in knowledge in the Ego. Only through it is order and harmony brought into the dead, formless matter. From man alone does regularity proceed and extend around him to the boundary of his perception.'

It was this doctrine which Samuel Taylor Coleridge poked fun at in what he called a dithyrambic ode to a new Teutonic God who announces himself thus:

En! Dei vices gerens, ipse Divus,
(*Speak English, Friend*) the God Imperativus,
Here on this market place aloud I cry:
I, I, I! I itself I!
The form and the substance, the what and the why,
The when and the where, and the low and the high,
The inside and outside, the earth and the sky,
I, you and he, and he, you and I,
All souls and all bodies are I itself I!
All I itself I!
(*Fools! a truce with this starting!*)
All my I! all my I
He's a heretic dog who but adds Betty Martin!

Of greater importance were Hegel and Schelling. To Hegel everything in the end was pure Spirit or Mind in contemplation of itself, but it was not from this neo-Platonism that Hegel derived his stature, but from something seemingly quite remote from the stilly

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Absolute—from a theory of the developmental process, and the logic he associated with it. He was the inventor of the triadic movement, *thesis, antithesis, synthesis*, which he called the *dialectic*. The dialectic was not only a description of the *process* he divined at work in the universe, it was at the same time an intellectual *method* of arriving at the truth. The dialectic was taken over as it stood by Marx and applied strictly to material reality, but otherwise without change. For Marxism too it remains a doctrine and a method.

The principle of the dialectic is that any apparently stable situation, circumstance or postulate, is involved in contradictions and change. It is not pure. It is not the task of metaphysicians to rub out these contraries, but to seek out their meaning. In normal logic what is mutually contradictory is untenable: it is nonsense to say that A is both B and not-B. Scholastic logic taught that propositions which do not hold true in logic cannot be postulated of reality. But Kant had laid bare the antinomies of philosophical thought, of the possibility of logical proof of diametrically opposed propositions such as this, for example,

'Thesis: Every composite substance in the world consists of simple parts; and there exists nothing that is not either itself simple or composed of simple parts

'Antithesis: No composite thing in the world consists of simple parts; and there does not exist in the world any simple substance.¹ Since Kant it had become possible to think of irreconcilable but indispensable modes of describing reality: apparently mutually exclusive qualities might genuinely be predicated of a given thing. And Hegel's terms, in fact, first appear in the pages of Kant.

Now to argue that the Absolute is Pure Being, infinite and eternal, is to deprive it of those positive qualities by which reality is described (as John Scotus Erigena discovered). Such a *thesis* leads to the *antithesis*, also correct, that the Absolute is Nothingness. If both statements are true the Absolute is both not-Being and Being. But a union of Being and not-Being simply cannot reveal both qualities simultaneously: they are not the head and tail of a penny. The union must give rise to a new situation, or a new creation: for Hegel this is the third term of his triadic movement, the *synthesis*.

¹ *Critique of Pure Reason*, Transcendental Dialectic, Bk. II, Chap. II, Sec. II. (Everyman edn., p. 264.)

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And the new creation, the movement from Being to not-Being, or the tension between them, is Becoming.¹ And Becoming is also, in a sense, their reality, since in it they are to be discerned. But any movement in which a thesis and antithesis are shown together in movement in the third form, synthesis, or *becoming*, is not final: by its own terms it cannot be: it is itself a new *thesis* which must give rise in its turn to its *antithesis* from which will emerge yet another *synthesis*. Hegel, like Heraclitus, saw the contradictions involved in growth and change—the opposition, in fact, between our *statements* of truth or fact, and truth or fact *in themselves*. In themselves 'facts' are not static like terms, but are many-faceted and subject to change and are in constant movement even into their opposites. He sought to produce a new logic which served for definition and exploration of this inherently evolutionary as well as idealistic view of reality.

Schelling carried this transcendental idealism a stage further, to the assertion that subject and object were united in the Absolute: an argument by means of which many contradictions were capable of being reconciled, as that, for instance, freedom and necessity were aspects or refractions of the same ultimate reality.

Since Hume, English philosophy had fallen into decay. The utilitarian ethics of Bentham and the associationist psychology of Hartley and James Mill seemed to many to be the final word. John Stuart Mill's authority established utilitarianism as an intellectual orthodoxy. A sterility descended upon thought of the kind which is always brought about by the triumph of a closed system of ideas. Fortunately English philosophy was rescued from the despond into which it had fallen by three men of letters active in the first half of the century—Samuel Taylor Coleridge (1772–1834), Thomas Carlyle (1795–1881), and Sir William Hamilton (1788–1856). Considera-

¹ 'Pure Being, and pure Nothing is, therefore, the same. What is the truth, is neither Being nor Nothing, but that Being—does not pass over—but has passed over into Nothing, and Nothing into Being. But the truth is just as much not their undistinguishedness, but that they are not the same, that they are absolutely distinguished, but still, nevertheless, unseparated and inseparable, and either immediately disappears in its opposite. Their truth is, therefore, this movement of the immediate disappearance of the one in the other, *Becoming*; a movement in which both are distinguished, but by a distinction which has equally immediately sublated itself.' Hegel's *Logic*, Sec. 1, Chap. 1, par. ci. (Tr. Stirling, London, 1865, Vol. I, p. 321.)

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tion of the influence of these writers carries us back before the period of Darwin and Spencer, with whose thought the last chapter was principally concerned. It is useful therefore to recall the historical sequence. Coleridge's *Biographia Literaria* was published in 1817, in the same year as David Ricardo's *Political Economy*. Hamilton's article, *Philosophy of the Unconditioned*, an important source of contact with German idealism, was published in 1829, contemporary with James Mill's *Analysis of the Human Mind* and Lyell's *Principles of Geology*. Carlyle's *Sartor Resartus* was published in 1838, two years after *Pickwick Papers*, one year after Whewell's *History of the Inductive Sciences*, the year of young Queen Victoria's coronation. Hamilton's *Lectures* were published between 1858 and 1860—that is at the time of the debate about *Origin of Species* and just before Spencer's *First Principles*, and five years before the first important introduction of Hegel to English thought—Stirling's *Secret of Hegel*. We must conceive therefore of a formidable retort to utilitarianism and evolutionary materialism maturing in the first half of the century, to flower in the second half of the century in those giants of idealism we shall consider in the next chapter.

Coleridge was the first among those who did so much to introduce the new German thought of Kant and his successors into an England under the spell of empiricist and utilitarian philosophies. He is better known however, even to his own countrymen, as a poet, as the author of *The Ancient Mariner*, and of that wonderful visionary fragment *Kubla Khan*: with William Wordsworth he was, of course, the founder of the romantic movement in English poetry and a contributor to the memorable *Lyrical Ballads* which launched it in 1798. A certain faint moral odium still attaches to him in our puritan country because he was an opium addict and confessed to an incurable bone laziness which had so burdened him since childhood that at the end of his life his work was still a collection of fragments. Only for this reason did he fail to found a philosophical school.

Soon after the beginning of his literary career, Coleridge tells us: 'I retired to a cottage in Somersetshire at the foot of Quantock, and devoted my thoughts and studies to the foundations of religion and morals. Here I found myself all afloat. Doubts rushed in; broke upon me "from the fountains of the great deep" and fell "from the windows of heaven". The fontal truths of natural religion and the

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books of Revelation alike contributed to the flood; and it was long ere my ark touched on an Ararat, and rest. I was pleased with the Cartesian opinion, that the idea of God is distinguished from all other ideas by involving its reality, but I was not wholly satisfied. I began then to ask myself, what proof I had of the outward existence of anything?¹

In *Biographia Literaria* Coleridge records the many phases of heart-searching he passed through, from Pantheism, which he never wholly lost, he moved to Unitarianism and then to Neoplatonism. He died in communion with the Church of England and an influential figure within it. He praises Kant as the 'Seer of Königsberg' but was much in debt to mystics like William Law and Jacob Boehme and he contrasts their spiritual audacity with the timidities of the professional philosophers:

'Whoever is acquainted with the history of philosophy, during the last two or three centuries, cannot but admit that there appears to have existed a sort of secret and tacit compact among the learned, not to pass beyond a certain limit in speculative science. The privilege of free thought, so highly extolled, has at no time been held valid in actual practice, except within this limit; and not a single stride beyond it has ever been ventured without bringing obloquy on the transgressor. The few men of genius among the learned class, who actually did overstep this boundary, anxiously avoided the appearance of having done so. Therefore the true depth of science and the penetration to the inmost centre, from which all lines of knowledge diverge to their ever distant circumference, was abandoned to the illiterate and the simple, whom unstilled yearning, and an original ebulliency of spirit, had urged to the investigation of the indwelling and living ground of all things.'²

Coleridge is the most tantalizing of writers. He was a man of many beginnings and few endings; and the discursive nature of his completed works makes it difficult to trace a connected theme in any one of them. His mature thought is to be found in *Theory of Life*, posthumously published like *Confessions of an Enquiring Spirit*, and the *Essays of his Own Times* published by his daughter Sara in 1850. But his importance to the revival of interest in German meta-

¹ *Biographia Literaria* (Everyman edn., p. 95).

² *Ibid.*, (p. 68).

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physics was manifest as early as his *Biographia Literaria* and in the winter of 1818-19, at the Crown and Anchor in the Strand, he was to be found delivering a series of lectures upon the whole history of philosophy, beginning with Pythagoras and ending with Kant and Schelling. *The Times* announcement for 22nd March 1819 reads:

MR. COLERIDGE'S LECTURE FOR THIS EVENING, the GERMAN PHILOSOPHY with its bearings on the System of Locke, comprising the systems of Leibnitz, Kant and Schelling. Thursday, Don Quixote; and on Monday next Mr. Coleridge will deliver his LAST ADDRESS as a PUBLIC LECTURER, with a review and application of the whole preceding course. Eight o'clock. The Lec. on the History and Influence of Dogmatical Materialism, with notes, is preparing for the Press.¹

In *Biographia Literaria* Coleridge began to develop a metaphysic of his own but broke off sharply upon receipt of a letter of rebuke from a friend (which he good-humouredly reproduced) and returned to his meandering literary autobiography. Nevertheless he wrote enough to show the influence he was already exerting upon his times, as much by lectures and conversation as by his pen. He examined with much acuteness the associationist psychology of David Hartley with which he himself was so much in love at one time that he christened his eldest son David Hartley—O decline and fall, the second was christened Berkeley! The gist of his criticism is that the associationists pass off contemporaneity for association. To them association arises through contemporaneity, whereas in fact contemporaneity is simply the necessary ground which permits association. But association is never of *all* that is either synchronous or contiguous, but merely of that which, given those conditions, *is regarded by the mind as significant*. If any part of any remembered impression could call up everything else present to the mind at the moment of perception, and not simply *could* call it up but by the principle of association *must* do so, without selection, the result would be simply delirium.

¹ The shorthand notes of the lectures have only recently come to light and have been edited and published by Miss Kathleen Coburn of Toronto University as *The Philosophical Lectures of S. T. Coleridge* (Routledge and Kegan Paul, London, 1949). They reveal Coleridge in all seriousness as the historian and critic of philosophy. It is from this work (p. 368) that I take *The Times* announcement.

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The more positive aspect of his thought begins with mutually exclusive hypotheses: in any theory of knowledge we grant primacy, he argues, either to the objective or the subjective experience. 'Either the Objective is taken as the first, and then we have to account for the supervention of the Subjective, which coalesces with it. . . . Or the Subjective is taken as first, and the problem then is, how there supervenes to it a coincident objective.'¹ From this he proceeds to develop ten theses of which the first sets the key: 'Truth is correlative to being. Knowledge without a correspondent reality is no knowledge; if we know, there must be somewhat known by us. To know is in its very essence a verb active.'² However, truth is either mediate or immediate: either absolute, that is, or dependent. The dependent derives its certainty from the absolute. The problem is to seek for a self-grounded truth by which other truths can be demonstrated. There can be, it follows, only *one* such truth and it cannot be an object, for an object is dependent (it belongs to a subject): for Coleridge the ground is *Sum—I Am*, the subjective experience of Self, or self-consciousness. Yet this runs the philosopher into difficulties: 'Whatever in its origin is objective, is likewise as such necessarily finite. Therefore, since the spirit is not originally an object, and as the subject exists in *antithesis* to an object the spirit cannot originally be finite. But neither can it be a subject without becoming an object, and as it is originally the identity of both, it can be conceived neither as infinitive nor finite exclusively, but as the most original union of both. In the existence, in the reconciling, and the recurrence of this contradiction consists the process and mystery of production and life.' He reached a conclusion, which he borrowed from Schelling that 'the true system of natural philosophy places the sole reality of things in an Absolute . . . in the absolute identity of subject and object'.³

The second seminal influence was Thomas Carlyle, the poor boy from the tiny little village of Ecclefechan not far from the Scottish border. He was the eldest of nine children, to whom he was devoted and generous all his life, and his father, a stern Calvinist, was a mason and afterwards a small farmer. Thomas showed early such ability that his father decided to enter him for the ministry: when he was no more than fourteen the boy walked to Edinburgh to com-

¹ *Biographia Literaria* (pp. 125-7).

² *Ibid.*, (p. 129).

³ *Ibid.*, (pp. 133, 135).

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mence studies at the University. He became, however, not a minister, but a schoolmaster, and he lost his faith. To one of his temperament, atheism was an intolerable agony of mind and he went through a spiritual crisis so intense that in the end it cost him three weeks of sleeplessness. He tells the story of his spiritual burning in that formidable and grotesque autobiography, *Sartor Resartus*:

'To me the Universe was all void of life, of Purpose, of Volition, even of Hostility; it was one huge, dead immeasurable Steam-Engine, rolling on, in its dead indifference, to grind me limb from limb. O, vast, gloomy, solitary Golgotha, and Mill of Death! In spiritual emptiness like death itself he walked the streets until a 'grim fire-eyed defiance' was roused in him: "What art thou afraid of? Wherefore, like a coward, dost thou forever pip and whimper, and go cowering and trembling? Despicable biped! what is the sum-total of the worst that lies before thee? Death? Well, Death; and say the pangs of Tophet too, and all that the Devil and Man may, will or can do against thee! Hast thou not a heart; canst thou not suffer whatsoever it be; and, as a Child of Freedom, though outcast, trample Tophet itself under thy feet, while it consumes thee? Let it come, then; I will meet and defy it!" And as so I thought, there rushed like a stream of fire over my whole soul; and I shook base Fear away from me forever. I was strong, of unknown strength; a spirit, almost a god . . . my whole Me stood up, in native God-created majesty, and with emphasis recorded its Protest. Such a Protest, the most important transaction in Life, may that same Indignation and Defiance, in a psychological point of view, be fitly called. The Everlasting No had said: "Behold, thou art fatherless, outcast, and the Universe is mine (the Devil's); " to which my whole Me now made answer: "I am not thine, but Free, and forever hate thee!"'

'It is from this hour that I incline to date my Spiritual New-Birth, or Baphometic Fire-Baptism; perhaps I directly thereupon began to be a Man.'¹

By sheer force of character Carlyle came to bestride his age like a colossus: he was the George Bernard Shaw of his times (but without his salty wit), the iconoclast who believed it was his destiny to attack the mealy-mouthed humbugs of the day. He was bitterly

¹ *Sartor Resartus*, Bk. II, Chap. VII. (World's Classics edn., pp. 142-4.)

hostile to the calculating, petty-trader spirit he saw at work around him in Benthamism, Spencerism, and even in Parliamentary democracy with its anxious counting of heads. He visited Coleridge at Highgate, but was not impressed by the oracle, and dismissed him as ineffectual, a genius 'run down'. Carlyle wrote a life of Schiller and translated *Wilhelm Meister*: he became the admirer and correspondent of Goethe, and the self-appointed interpreter of Germany to Britain. The publication of his polemical *French Revolution* (1837) was the real turning-point of his life. He abandoned the earlier radicalism which had made him the friend of John Stuart Mill (who acted towards him, when he lost the manuscript of *French Revolution*, as generously as to Spencer) and against the whole spirit of his age he came to stand for the heroic conception of life. The titles of his greatest works, *Heroes and Hero-Worship*, *Cromwell*, *Frederick the Great* themselves tell us much about this rugged spirit who has been called 'A Calvinist without theology'.

When Carlyle abandoned the Calvinism of his fathers, he was left with only the 'easy-going, drawing room rationalism of Hume or Gibbon' or the superficialities of Bentham as substitutes for religion. But he revolted against the polite Deism which pictured an idle absentee God watching his universe work. He rejected equally the rationalist view of nature:

'Atheistic science babbles poorly of it, with scientific nomenclature, experiments and what not, as if it were a poor dead thing, to be bottled up in Leyden jars and sold over the counter; but the natural sense of man, in all times, if he will honestly apply his sense, proclaims it to be a living thing, ah, an unspeakable, godlike thing; towards which the best attitude for us, after never so much science, is awe, devout prostration and humility of soul, worship if not in words, then in silence.'¹ And in a Hegelian spirit he concludes that: 'Matter, were it never so despicable, is Spirit, the manifestation of Spirit: were it never so honourable, can it be more? The thing Visible, nay, the thing Imagined, the thing in any way conceived as Visible, what is it but a Garment, a Clothing of the higher, celestial Invisible, "unimaginable formless, dark with excess of bright".'² All in all, he argued, since the West was so deafened by

¹ *On Heroes and Hero-Worship*. (World's Classics edn., p. 9.)

² *Sartor Resartus*, Bk. I, Chap. X (p. 56).

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its democratic excesses, 'the din and frenzy of Catholic Emancipation, and Rotten Boroughs, and Revolts of Paris', it was a fine thing that there was one peaceful, learned, indefatigable country left, Germany, where Abstract Thought was still possible. What a good job the Germans could stand on their scientific watch-towers remote from our raging multitudes and look down on us!

So perhaps thought Sir William Hamilton, Professor of Logic and Metaphysics in the University of Edinburgh from 1836 to 1856, the third seminal force we have to consider. In learning he was the greatest adornment of the Scottish School of Philosophy, whose views he so consistently expounded. He spoke many times of the strong resemblance between the philosophies of Reid and Kant. Both, he said, originated in a recoil from the scepticism of Hume and both opposed the 'sensualism' of Locke: both sought to vindicate the moral dignity of man and to define in what our intellectual activity was legitimate, and in what it was not. Yet his contrast of the philosophies of Kant and Reid is an illuminating one, too, and it helps to recall that Hamilton's view of Kant was not the imperceptive and uncritical one often alleged against him at the time of the publication of his lectures. 'As it was primarily to reconnect Effect and Cause that Kant was roused to speculation', Hamilton wrote, 'so it was primarily to regain the worlds of Mind and Matter that Reid was awakened to activity. Accordingly Kant, admitting, without question, the previous doctrine of philosophers, that the mind has no immediate knowledge of any existence external to itself, adopted it without hesitation as a principle—that the mind is cognisant of nothing beyond its own modifications, and that what our natural consciousness mistakes for an external world, is only an internal phenomenon, only a mental representation of the unknown and inconceivable.'¹ Reid on the contrary, proved that 'the immediate knowledge of objects' was possible, and so shook even Kant's theory of perception. Summarized, Hamilton's criticism of Kant runs like this: Kant's attack upon Hume's scepticism was an admirable thing in itself, but though he succeeded in controverting it, it was only by introducing a new and worse variety of doubt. Though Kant showed that Hume's dismissal of causation was absurd, and that causation was 'a real and efficient

¹ *Lectures on Metaphysics and Logic*, 2nd edn., 1861, Vol. I, p. 397.

principle, native and necessary in human intelligence', he went on to argue that Intelligence is at odds with itself and that all speculation ends with insoluble antinomies. The melancholy result of this, said Hamilton, is a pessimism still worse than Hume's. Hamilton claimed that his own merit in philosophy rested on his analysis of Kant's contradictions and his demonstration that they arose only because the intelligence sought to pass beyond its legitimate functions. He hoped therefore to have shown that 'the human mind was not the work of a treacherous Creator'.

An event of great importance in the dissemination of the German philosophy was the publication of *The Secret of Hegel* by J. H. Stirling in 1865, with its valuable translation of the first section of Hegel's *Logic* as the principle substance of the book. Stirling ingenuously confesses that the work presented some difficulties for the reason that what on his part had begun with an exposition of Kant became a work on Hegel when he 'suddenly perceived' that it was to Hegel that 'the Public probably looked with the greatest amount of expectant interest, if also of baffled irritation'. Stirling's *Preface* to his work is a long, wordy but lively defence and exposition of the Hegelian position, hung around Lockhart's remark to a would-be translator of Hegel, 'What! would you introduce that d—d nonsense into this country?' Stirling had no use for the contributions of Carlyle, Coleridge and Hamilton to the popularization of German thought. Their ignorance was enormous, their pretensions disgraceful, he declared. He poured scorn on Coleridge's mysticism, declaring that it had nothing to do with Hegel, whose *Logic* was a work on the same plane as Newton's *Principia*—that is to say a work of science of which the difficulties were purely technical and demanded only perseverance for their elucidation. Nothing roused the wrath of Stirling more than de Quincey's claim that Coleridge was superior to any German that ever breathed. 'Coleridge superior to Schelling?' Why, Coleridge plagiarized Schelling and 'Schelling really effected something—the Natur-Philosophie, the Transcendental-Philosophie—something that *has* historically functioned, and still historically functions. But what else has Coleridge effected? Aught else than fragmentary poetry—Christabel—the Ancient Mariner? Aught else than fragmentary criticism of poetry—chiefly Wordsworth's? *Erudition!* Desultory dipping and

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pretentious maundering about the same with an idle parade of some resultant names? *Religion!* A transient hectic in some half-a-dozen students of theology? *Philosophy!* Where is it? . . . ' Stirling boils over in his campaign against all high-flying and prophetic fraudery, though poor Coleridge was long dead and could not reply. It is these Carlyle-like outbursts which make a book on Hegel what *a priori* one would have declared impossible—vastly entertaining.

Certainly Stirling makes a better job of explaining the dialectic than Coleridge, who one is convinced never grasped it. Stirling explains that to us, in any conception which we have, for instance, of *Quantity*, *Continuity* is one thing and *Discretion* generally considered to be an opposing thing. In the one case, *continuity*, we think of a line, in the other, *discretion*, we picture, say, a series of dots. Hegel, the modern Heraclitus, perceives that the two opposing conceptions are bound together and that it is just as impossible to consider *continuity* without *discretion*, as vice versa. 'We see them abstractly, apart—the one independent of, different from, the other, *he* sees them, concretely, together—the one dependent on, identical with, the other. To Hegel it is obvious that continuity and discretion, not either singly, but both together, constitute *Quantity*—that, in short, these are constitutive moments or elements of the single pure, abstract, yet in itself concrete, Notion, *Quantity*. If a *continuum* were not in itself discrete, it were no quantity; and nowhere in *rerum natura* can there be found any *continuum* that is not in itself discrete. Similarly, if a *discretum* were not in itself continuous, it were no quantity, and so on. In fact, to the single notion, quantity, these two sub-notions are always necessary: . . . *Quantity* is a concrete of the two; *they* are indivisibly, inseparably together *in it*. Now every Notion—truly such—is just such disjunctive conjunct or conjunctive disjunct. Hence it is that Dialectic arises. . . .'¹

After Stirling, Hegel could still be misunderstood. Clearly he regarded this as his destiny for he remarked at the end of his life 'Only one man has understood me and even he has not'. But at least, and at last, he could be studied, and the second half of the nineteenth century in Britain was to be marked by the ascendancy of the German philosophy and the decline of empiricism. The decline, however, was to prove a temporary one.

¹ Op. cit., 1865, Vol. I. Preface, pp. I-ii.

CHAPTER THIRTEEN

The Absolute

THOMAS HILL GREEN (1836-1882)

F. H. BRADLEY (1846-1924)

EDWARD CAIRD (1835-1908)

JOHN ELLIS McTAGGART (1866-1925)

BERNARD BOSANQUET (1848-1923)

The first really influential philosopher to expound the new idealism was Thomas Hill Green, who was born in 1836, the son of a Yorkshire rector. He was educated at Rugby and Balliol and became a fellow of his College in 1860. Thereafter his life was passed in teaching at Oxford. In 1878 he became Whyte Professor of Moral Philosophy and died prematurely four years later. His lectures were published posthumously in two volumes *Prolegomena to Ethics* and *Lectures on the Principles of Political Obligation*.

In the *Prolegomena* Green announced the return to Kant:

"The discovery, however, that our assertions of moral obligation are merely the expression of an ineffectual wish to be better off than we are, or are due to the survival of habits originally enforced by physical fear, but of which the origin is forgotten, is of a kind to make us pause . . . [but] as the first charm of accounting for what has previously seemed the mystery of our moral nature passes away, and the spirit of criticism returns, we cannot but enquire whether a being that was merely the result of natural forces could form a theory of those forces as explaining himself. We have to return once more to that analysis of the conditions of knowledge, which forms the basis of all Critical Philosophy whether called by the name of Kant or not, and ask. . . . Can the knowledge of nature

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be itself a part or product of nature, in the sense of nature in which it is said to be an object of knowledge?¹

Green's answer was in the negative. He echoed Kant—'the understanding makes Nature'. But his adherence to Kant was not a total one. The Absolute was anglicized and liberalized in the *Prolegomena*, an original work of the first importance, which more than any other study of its time marks the return of English philosophy to the European stage.

Green agrees that, as against the utilitarian view, there is indeed 'a sense in which man is related to nature as its author, as well as one in which he is related to it as its child'. Nevertheless, important as this Kantian doctrine is, the difficulties into which it runs are to be perceived by the qualification that the understanding makes nature *out of a material which it does not make*. Is there such a material? The 'apparent ascription of nature to a twofold origin—an origin in understanding in respect of its form as a nature, as a single system of experience; an origin elsewhere in respect of the "matter" through which the action of the understanding becomes a nature—cannot but strike us as unsatisfactory'.² Green sharply attacks this division of the totality into two more or less uncommunicating halves. A new approach to the nature of the 'real' and 'objective' is necessary. And the 'real' and 'objective' (equally with 'fanciful' and 'illusory'), Green argues, 'have no meaning except for a consciousness which presents its experiences to itself as determined by relations, and at the same time conceives a single and unalterable order of relations determining them, with which its temporary presentation, as each experience occurs, of the relations determining it may be contrasted'.³ Primacy is granted therefore to the ordering consciousness, and whatever we may decide about consciousness, there will always be an important sense 'in which understanding, or consciousness . . . may be said to be the principle of objectivity'.

What is consciousness? Experience, in the empiricist or associationist sense, is of course necessary to knowledge, but if the mind or consciousness were nothing but the passive register of experience then knowledge itself would be impossible, for knowledge is

¹ Op. cit., Oxford, 1883, Introd. par. 8 (p. 10).

² Ibid., Bk. I, Chap. I, par. 11 (p. 15-16).

³ Ibid., Bk. I, Chap. I, par. 13 (p. 17).

not *itself* simply change (or changing sensory experience) it is *consciousness* of change. Of course, the *process* of acquiring knowledge is one of change or development. But the acquired knowledge is of another order. Change of consciousness is *not* consciousness of change. And there can be no consciousness of change which does not bring together and relate in one act of understanding experiences which differ from each other in points of time and space, and in other qualities or attributes. 'It seems necessary then, to admit that experience, in the sense of a consciousness of events as a related series—and in no other sense can it help to account for the knowledge of an order of nature—cannot be explained by any natural history, properly so-called. It is not a product of a series of events. It does not arise out of materials other than itself. It is not developed by a natural process out of other forms of natural existence.'¹

Nature and all that belongs to it is a process of change, but no process of change can yield a consciousness of itself, for to be conscious of itself, all stages of the process of change must be equally present to itself, which is to say that they must transcend change. If change and consciousness of change are two different things, only something which stands outside change, even outside time, can be conscious of change. That something is the human intelligence, or the spiritual principle in man. By this road Green comes to distinguish man from nature. Man is not *in part* a product of nature, and *in part* a free spiritual consciousness. Man is a subject in whom the eternal consciousness reproduces itself. He is himself a creative being, a free cause. And the work of man's consciousness in arranging, examining and relating the simplest perceptions is, with little thought about the way our minds work, very easily demonstrated.

Yet although man is, so to speak, an organ of the eternal consciousness, he is also a *learning* being. He accumulates knowledge: he is conscious of himself as a growing and changing being. How, if he is an aspect of an eternal and unchanging principle, is this growth possible? Does not such an argument suggest two minds in man or two opposing principles, omniscience, and development towards omniscience?

¹ *Ibid.*, Bk. I, Chap. I, par. 18 (pp. 21-22).

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Green answers that the common notion of knowledge suggests that we accept a truth or order which exists independently of us. We increase our knowledge of that order but do not imagine that we bring it into existence as we do so. Our discoveries are of realities which existed before us, we are certain. The process is analogous to reading. We cannot even begin to read unless we accept in advance that all the words which are going to fall into sentences before our eyes form part of a related whole of meaning: a meaning which was there before we began to look for it. Though we know this, the meaning of the whole is not evident to us at once. We have to read word after word, sentence after sentence. 'In reading the sentence we see the words successively, we attend to them successively, we recall their meaning successively. But throughout that succession there must be present continuously to the consciousness that the sentence has a meaning as a whole; otherwise the successive vision, attention, and recollection would not end in a comprehension of what the meaning is. This consciousness operates in them, rendering them what they are as organic to the intelligent reading of the sentence. And when the reading is over, the consciousness that the sentence has a meaning has become a consciousness of what in particular the meaning is—a consciousness in which the successive results of the mental operations involved in the reading are held together, without succession, as a connected whole. The reader has then, so far as that sentence is concerned, made the mind of the writer his own. . . .'¹

The apprehension of the order of the universe is then the discovery of a meaning which is already there. Yet we have to be clear *what* we are discovering in nature: it is an unchanging order of relations. *But we do not know of relations independent of consciousness.* 'We must hold then that there is a consciousness for which relations of fact, that form the object of our gradually attained knowledge, already and eternally exist; and that the growing knowledge of the individual is a progress towards this consciousness.'² This Supreme Consciousness is God, or the Absolute.

This judgment contains the key to Green's position and reveals the importance he attaches to *relations*. His epistemology is founded

¹ *Ibid.*, Bk. I, Chap. II, par. 71 (pp. 75-6).

² *Ibid.*, Bk. I, Chap. II, par. 69 (p. 75).

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on *relations*, and it refers them to an eternal consciousness at the back of all phenomena, natural or spiritual, in which the final meaning of them must reside. Green admits that we cannot say just why reality should manifest itself in the form in which we apprehend it; why, that is, the eternal mind should seek what appears to be self-realization through organic forms with a natural history. 'We have to content ourselves with saying that, strange as it may seem, it is so. . . . The unification of the manifold in the world implies the presence of the manifold to a mind, for which, and through the action of which, it is a related whole. The unification of the manifold of sense in *our consciousness* of a world implies a certain self-realization of this mind in us through certain processes of the world which . . . only exists through it—in particular through the process of life and feeling.'¹

Green reached this idealist or spiritualist position through the attempt he made, which I have already mentioned, to make sense of Kant's distinction between the *effect* of the 'thing-in-itself', the unknown thing acting in unknown ways upon us, and the *formal* nature, the *related* nature which our intelligence apprehends or perceives. Kant's phenomenism produces an uncomfortable dualism, he argues, in which 'The "cosmos of our experience", and the order of things-in-themselves, will be two wholly unrelated worlds, of which, however, each determines the same sensations.' There will be one world of which a unifying self-consciousness is the organizing principle, and another with a different order of determinations of which the principle must be the pure negation of that which rules the world of experience. 'If this be so, the conception of a universe is a delusive one. Man weaves a web of his own and calls it a universe; but if the principle of this universe is neither one with, nor dependent on, that of things-in-themselves, there is in truth no universe at all, nor does there seem to be any reason why there should not be any number of such independent creations.'²

His conclusion is close to Berkeley's. The Kantian error lies in the distinction we make, for the sake of convenience, between *matter* and *form*. It arises partly out of the assumption we make that there are sensations *antecedent* to some act of judgment about them.

¹ Ibid., Bk. I, Chap. III, par. 82 (pp. 86-7).

² Ibid., Bk. I, Chap. I, par. 39 (p. 42).

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A sensation can only form an object of experience by being determined by an intelligent subject. 'To suppose a primary datum or matter of the individual's experience, wholly void of intellectual determination, is to suppose . . . what could not belong to or be an object of experience at all.' If one grants, Green argues, *his* view of the primacy of relations:—that these relations constitute the minimum determination of a fact and that they can only come into existence through the action of a self-conscious subject, 'it follows that thought is the necessary condition of the existence of sensible facts'. 'We can attach no meaning to "reality", as applied to the world of phenomena, but that of existence under definite and unalterable relations; and we find that it is only for a thinking consciousness that such relations can subsist.'¹

It is not certain that T. H. Green would have accepted this as a correct analysis of his position, even though it is given largely in his own words. In his attack on the psychology of Herbert Spencer and G. H. Lewes, published in the *Contemporary Review* between 1877 and 1881, Spencer's dualism was closely examined. What Spencer understands by 'idealism', Green argues, is what the raw undergraduate understands by it. 'It means to him a doctrine that "there is no such thing as matter", or that "the external world is merely the creation of our minds"—a doctrine expressly rejected by Kant, and which has had no place since his time in any idealism that knows what it is about.'² And it is Spencer he accuses of falling unwittingly into the idealism of Berkeley and Hume. In his principal attack on Spencer, Green writes that the idealist's 'quarrel with the doctrine of which Mr. Spencer is the most eminent representative is briefly this, that taking, and rightly taking, the relation between object and subject as its datum, it first misinterprets this into a "dictum" on the part of consciousness that something independent of itself—something which can exist without consciousness, though not consciousness without it—is acting upon it; and then proceeds to explain that knowledge of the world which is the developed relation between object and subject, as resulting from an action of one member of the relation upon the other. It ascribes to the object, *which in truth is nothing without the subject*, an independent

¹ *Ibid.*, Bk. I, Chap. I, par. 51 (p. 53).

² *Works of T. H. Green*, Ed. R. L. Nettleship, London, 1885, Vol. I, p. 386.

reality, and then supposes it gradually to produce certain qualities in the subject, of which the existence is in truth necessary to the possibility of those qualities in the object which are supposed to produce them. Instead of regarding subject and object as logical or ideal (though not less real) factors of a world which thought constitutes, it "segregates" them as opposite divisions of the world, as two parts of the complex of phenomena, separate though capable of mutual interaction, of which one is summarily described as thoughts, the other as things. . . . "Thoughts" having thus been made the evidence for "things", no more questions are asked about the "things". On the strength of the admitted determination of subject by object—the converse determination being ignored—they are afterwards assumed to be the efficient cause of "thoughts".¹

Green shrewdly exposes the weakness in Spencer's position, but his own monism reduces the objective world to a situation of dependence upon self-consciousness and eternal consciousness (even in a passage where he is seeking to prove the opposite) without at the same time really determining what that objective experience *is*, and is *of*. It is the old problem of why the Absolute which is a harmonious whole should be experienced only as parts, divisions, contradictions.

Green's metaphysics are a preliminary to his major task, an examination of ethics. The transition from one to the other is closely argued. Just as consciousness, he deduces, distinguishes itself from *impressions*, and thus builds up a world of ordered knowledge, so it distinguishes itself from *wants*, and is thus able to build up a *judgment* of them. The distinction between *wants* and a judgment of them makes possible the world of *practice*, a world about which it is possible to decide that a thing should be or should not be. A *want* is not the same thing as a *motive*. A *motive* bears much the same relation to a want as the action of the intelligence does to the impressions at its disposal. A judgment of a moral kind is made in the first case, and a judgment of truth in the second case. And for the same reason—that man is not a series of natural events, but a self-consciousness who is part of the eternal consciousness. Man transcends nature not only in his ability to know nature, but because he is possessed of a moral *will*. Just as, by his participation

¹ *Ibid.*, p. 388. Italics mine.

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in the divine, he is impelled to seek knowledge, so also must he seek good. The good he seeks is personal good, but this is not to be confused with utilitarian pleasure. Man is free, but that is not to say that his choice of ends is entirely unconditioned. His moral decisions are governed by his character and history—by the ends he has set himself. Man is not a 'self' entirely independent of his history: but all the same this history of the self is known and judged in that self-consciousness which is above events, and which therefore has no history. And this is important when it comes to a consideration of *why* a man acts in a particular way. Is he determined by his history so to act? Or does he simply submit to the strongest desire? 'It may very well happen that the desire which *affects* a man most strongly is the one which he decides on resisting. In spite of its strength, he cannot make its object, *his* object, the object with which he seeks to satisfy himself. His character prevents this. In other words, it is incompatible with his steady direction of himself towards certain objects in which he habitually seeks satisfaction.'¹

And again Green writes: 'Regarding the good generically as that which satisfies desire, but considering the objects we desire to be by no means necessarily pleasures, we shall naturally distinguish the moral good as that which satisfies the desire of a moral agent, or that in which a moral agent can find the satisfaction of himself which he necessarily seeks. The true good we shall understand in the same way. It is an end in which the effort of a moral agent can really find rest.'²

We thus arrive at the situation in which man's will, not his desire, is the predominant element in his choice of ends. But Green does not oppose *will* to *reason*, he makes them complementary. 'By will is understood, as has been explained, an effort (or capacity for such effort) on the part of the self-conscious subject to satisfy itself: by reason, in the practical sense, the capacity on the part of such a subject to conceive a better state of itself as an end to be attained by action.'

Green was a personalist philosopher. He set himself steadily against the tendencies of his time to make man part of a process, whether of nature or of society. He was as reluctant to atomize man

¹ *Prolegomena*, Bk. II, Chap. I, par. 105 (p. 108).

² *Ibid.*, Bk. III, Chap. I, par. 171 (p. 179).

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as to account for him in terms of some aggregation of which he might be part. 'Our ultimate standard of worth,' he wrote, 'is an ideal of personal worth. All other values are relative to value for, of, or in a person.' The progress of mankind (and he lived in an age when progress was deified) 'is thus an unmeaning phrase, unless it means a progress of personal character and to personal character'. This determines his whole conception of the nature and destiny of man. 'If history of mankind were simply a history of events, of which each determines the next following, and so on in endless series, there would be no progress or development in it. As we cannot sum an infinite series, there would be nothing in the history of mankind, so conceived, to satisfy that demand for unity in the manifold in relation to an end, which alone leads us to read the idea of development into the course of human affairs. If there is a progress in the history of men it must be towards an end consisting in a state of being which is not itself a series in time, but is both comprehended eternally in the eternal mind and is intrinsically, or in itself, eternal.'¹

Green's political philosophy was set forth in *Lectures on the Principles of Political Obligation* edited by R. L. Nettleship and posthumously published in 1895. As was to be expected of one who laid stress on the importance of the will in the pursuit of ends, his *Political Obligation* comes down on the side of active or positive freedom. Freedom is the chief end of society, but it does not consist in a mere *passive* state of liberty, but in the exercise or enjoyment of positive powers or capacities. It is an active principle. It is, therefore, the task of government to do more than protect passive rights: it must promote active freedoms. There is a role for legislation which sets out to remove any obvious inequalities which stand in the way of the enjoyment of active freedoms. 'We content ourselves,' Green wrote, 'with enacting that no man shall be used by other men as a means against his will, but we leave it to be pretty much a matter of chance whether or no he shall be qualified to fulfil any social function, to contribute anything to the common good, and to do so freely.'²

Green derived his sense of the corporate responsibilities of

¹ *Ibid.*, Bk. III, Chap. II, par. 189 (p. 198).

² *Political Obligation*, Sec. 155. (*Works*, Vol. II, p. 465.)

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society from Hegel, perhaps also from Rousseau. But just as he rejected much of Kant, so he rejected much of Hegel's political philosophy, particularly his state worship. The personalism to which I have already made reference forbade this Hegelian perversity. Green affirmed that the realization and fulfilment of the human spirit could only take place 'in and through society'. But without persons there would be no society, and neither society nor nation could exist in the air, independent of persons.

The same positive liberalism led him to refute the notion which the nineteenth century was everywhere reviving, especially through evolutionary and Marxist doctrines, of society as the product of force, and in essence therefore a tyranny. Not force, he argued, but *will* was the foundation of society. The moralist who finds that reason has a role in history 'will listen respectfully to any account, for which historians can claim probability, of the courses of events by which powers, strong enough to enforce general obedience, have been gathered into the hands of individuals or groups of men; but he will reflect that, though the exercise of force may be a necessary incident in the maintenance of government, it cannot of itself produce the state of mind on which social union in any of its forms depends.'¹

The most important of Green's pupils was F. H. Bradley, whose *Appearance and Reality*, published in 1893, a landmark of modern philosophy, wrested the philosophical initiative from the continent. Bradley was born at Brecknock in 1846, educated at University College, Oxford, and became a Fellow of Merton College in 1876. He was given the Order of Merit in 1924 and died in the same year. His first important attack on hedonism and utilitarianism was contained in *Ethical Studies* (1877). *The Principles of Logic* followed in 1883.

Appearance and Reality begins in a mood of the greatest scepticism. 'Metaphysics is the finding of bad reasons for what we believe upon instinct, but to find these reasons is no less an instinct' is a dictum which might have come straight from Hume. And the apology for his enquiry might have been written by Descartes: 'The chief need of English philosophy is, I think, a sceptical study of first principles, and I do not know of any work which seems to

¹ *Prolegomena*, Bk. III, Chap. III, par. 204 (p. 215).

meet this need sufficiently. By scepticism is not meant doubt about or disbelief in some tenet or tenets. I understand by it an attempt to become aware of and to doubt all preconceptions.¹

It goes without saying that *Appearance and Reality* derives both from Hume and from Kant, and would hardly have come to be written without them, at least in the shape that it bears. Yet even so the scepticism of the first part of the work, in which *appearances* are critically examined, is remarkable: it has no equal outside the pages of Hume's *A Treatise of Human Nature*. The thesis of T. H. Green is turned upon its head. Relations, for Bradley, witness to unreality. Qualities with relations are inconsistent, but then, so are qualities without relations. Qualities with relations have either their relations included with them, or separate from them. If they are separate from them, how are they joined to them? If they are included within them, how are they relations? If there are no relations, and it's all a phantasm, then we have to face a universe of independent monads with no influence on each other, which is just as absurd. Bradley begins his quest for truth by an analysis of primary and secondary qualities. He accepts the empiricist argument that secondary qualities turn out to be mere appearances. But then, are the primary qualities able to stand demonstratively by themselves? He fears not. They are equally under suspicion of being mere appearances.

The world's contents are commonly grouped into things and their adjectives, and the lump of sugar by which Bradley demonstrates the alleged feebleness of this form of thinking has become famous. 'We may take the familiar instance of a lump of sugar. This is a thing, and it has properties, adjectives which qualify it. It is, for example, white, and hard, and sweet. The sugar, we say, *is* all that; but what the *is* can really mean seems doubtful. A thing is not any one of its qualities, if you take that quality by itself; if "sweet" were the same as "simply sweet", the thing would clearly be not sweet. . . . Nor, again, can the thing be all its properties, if you take them severally? Sugar is obviously not mere whiteness, mere hardness, and mere sweetness; for its reality lies somehow in its unity. But if, on the other hand, we inquire what there can be in the thing beside its several qualities, we are baffled once more. We can discover no

¹ 1st. edn., 1893, Preface xii.

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real unity existing outside these qualities, or, again, existing within them.¹

And when we try to describe a thing by its relations with other things we meet even greater difficulties. If we say that *C* is before *D*, we do not mean that 'before *D*' is what *C* really is in itself: and when we say that 'F is to the right of E' again we do not mean that the position of *F* in relation to the position of *E* is the *content*, or being, of *F*. 'And we seem unable to clear ourselves from the old dilemma, if you predicate what is different, you ascribe to the subject what it is *not*; and if you predicate what is *not* different, you say nothing at all.'² Relation, then, becomes some sort of delusion. In the end we are forced to the conclusion that all is *appearance*, which might also, of course, be expressed empirically that all is *experience*. However, all is not lost, for the appearance must truly *appear*, and the appearances are therefore the appearances *to the perceiver*: they belong to him or it and are not to be thought of apart from him or it. The perceiver and the world are bound together in some sort as one. Where then do we arrive? That 'things-in-themselves' are uncommunicative and that neither relations nor adjectives expose reality to us. Our subject-predicate way of thinking is 'a makeshift, a device, a mere practical compromise, most necessary, but in the end most indefensible. We have to take reality as many, and to take it as one, and to avoid contradiction. We want to divide it, or to take it, when we please, as indivisible, to go as far as we desire in either of these directions, and to stop when that suits us. And we succeed, but succeed merely by shutting the eye, which if left open would condemn us; or by a perpetual oscillation and a shifting of the ground, so as to turn our back upon the aspect we desire to ignore. But when these inconsistencies are forced together, as in metaphysics they must be, the result is an open and staring indiscrepancy.'³

In the end everything in appearance is ruined and undermined for Bradley. He finds the same contradictoriness in space, which both is, and is not a relation, and in time too, of which he writes: 'According to one opinion, in the "now" we can observe both past

¹ *Ibid.*, p. 19.

² *Ibid.*, p. 20. See, however, what Bertrand Russell has to say on the difference between the 'is' of predication and the 'is' of identity, Chap. 17, p. 325 *infra*.

³ *Ibid.*, pp. 33-4.

and future; and, whether these are divided by the present, and, if so, precisely in what sense, admits of further doubt. In another opinion, which I prefer, the future is not presented, but is a product of construction; and the "now" contains merely the process of present turning into past. But here these differences, if indeed they are such, are fortunately irrelevant. All that we require is the admission of some process within the "now". For any process admitted destroys the "now" from within.¹

Causation is equally farcical. *A* becomes *B*, and in the process becomes *B* while it remains in some manner still *A*. But if the sequel is different from the cause where does the difference come from? And if it is not different where is the change which is the product of causation? It follows, too, that causation must be continuous. But if it is completely continuous then each section of the line of continuity must demonstrate change, which seems absurd, or suddenly change must appear in the continuity, which appears impossible. Causation is presumably a real event which must distinguish itself from what went before and what comes after. But if it is a real event it is discontinuous and therefore not causation. Activity comes under much the same condemnation. And the *self* suffers as complete a dismissal as that which Hume made, but more subtle. No definite meaning can be attached to it. It is not to be discovered in one special section of the individual's contents, such as his body or his memory. It would seem as if almost every item in our experience is capable of being set aside and considered as the *not-self* which we seek to eject from the *self*, just as the pain from which we suffer is regarded as the *not-self* which we seek to eject from the *self* while illogically the pleasure is not so rejected. Is there any limit to this process of converting experiences into *not-self*? Is there any logic in it? Bradley recognizes the existence of a line drawn between *self* and *not-self*, but he regards this line as a floating one. What lies across the line, within the margin, is not a permanent core of *self*. The margin shrinks or expands, shifts and wavers as we swivel our attention from this aspect of our experiences to that 'and we have not the smallest reason to suppose that at some point in its [the margin's] nature lies a hard and fast limit to the invasion of the *not-self*'.² We are left with an unsatisfactory definition of the

¹ *Ibid.*, p. 41.

² *Ibid.*, p. 93.

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self as that part of our psychic content which is not under examination—a residue. The self becomes a shifting point rather than a focus.

T. H. Green's *self-consciousness* is also dismissed, thus, 'the attempt to find in self-consciousness an apprehension at a level, not below, but above relations—a way of apprehension superior to discursive thought, and including its mere process in a higher harmony—appears to me not successful. I am, in short, compelled to this conclusion, even if your intuition is a fact, it is not an *understanding* of the self or of the world. It is a mere experience, and it furnishes no consistent view about itself or about reality in general.'¹

Yet if the critical method fails to discover reality, at least it discovers appearance. Appearance exists, it has to be accounted for, and whatever we describe as reality cannot be less than the appearances which are presented to the perceiver. Appearances are contradictory. Are we entitled to assume that reality is also contradictory? It is logical to assume that reality is self-consistent and therefore that appearances are not so inconsistent as they lead us to suppose. In ultimate Reality, appearances must be made harmonious. The contradictions they expose are not the last word, but derive from our own incomplete knowledge or perception. 'The character of the real is to possess everything phenomenal in a harmonious form. . . . The bewildering mass of phenomenal diversity must hence somehow be at unity and self-consistent; for it cannot be elsewhere than in reality, and reality excludes discord. Or again we may put it so: the real is individual. It is one in the sense that its positive character embraces all differences in an inclusive harmony.'² In short, reality is Absolute, and the Absolute makes consistent all inconsistencies. Yet still that Absolute *is* experienced, though incompletely: and not simply as volition or thought but as feeling: 'Sentient experience, in short, is reality, and what is not this is not real. We may say, in other words, that there is no being or fact outside of that which is commonly called psychical existence. Feeling, thought, and volition (any groups under which we class physical phenomena) are all the materials of existence, and there is no other material, actual or even possible.'³

Does this idealism lead to solipsism? Bradley argues not. The

¹ *Ibid.*, pp. 108-9.

² *Ibid.*, p. 140.

³ *Ibid.*, p. 144.

import and content of psychic processes is more than their appearance in psychical series. The content of the idea, thought, or of the end willed, may be beyond 'me': and since the content is effective, my thought, or my will is something *more* than the possession of my subjectivity. 'My private self is first set up, as a substantive which is real independent of the Whole; and then its palpable community with the universe, which in experience is forced on us, is degraded into the adjective of our miserable abstraction. But, when these preconceptions are exposed, Solipsism disappears.'¹ The process of depositing everything in the one subject is a process of abstraction like talking of subject and predicate, or of body and soul. And while every abstraction is in one sense true, in another sense it is also false.

In any case, Bradley believes in a community of souls. The soul is for him 'a finite centre of immediate experience possessed of a certain temporal continuity of existence, and again of a certain identity of character'. The soul is not the contents which appear in it, though the contents are necessary to it. The soul is ideal: it transcends the given moment: the soul 'has spread out its existence beyond that which is "actual" or could ever be experienced. . . . It has raised itself into the world of eternal verity.' And this is true even though in its other aspect the soul clings to time, to body. There is not one finite centre of experience but many: in other words many souls who communicate with each other by means of their bodies. But it has to be remembered that both constructions, body and soul, are imperfect means of looking at Reality—The Absolute. They are inconsistent, therefore, and are completed only in that supreme Reality.

Such considerations bring Bradley to his own peculiar contribution to idealism—his view of degrees of reality. There are no truths which are entirely true, and no errors totally false. It is a matter of degrees: all the truths which we grasp are measured against the Absolute: 'truth is relative and always imperfect . . . [but] all thought is to some degree true.' His lengthy defence of this position deserves closer study than can be given here, but the gist of the approach emerges from this quotation: 'Error *is* truth, it is partial truth, that is false only because partial and left incomplete. The Absolute *has* without subtraction all those qualities, and

¹ *Ibid.*, p. 259.

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it has every arrangement which we seem to confer upon it by our mere mistake. The only mistake lies in our failure to give also the complement . . . error will come merely from isolation and defect, from the limitation of each being to the "this" and the "mine".¹ We cross the threads, Bradley argues, of our 'whats' and 'thats' and collisions constantly take place in our psyche. Perhaps, he adds, the Author of all finite beings provokes such conflicts since the result must be a rich and wild discord which he hopefully describes as more true than mere truth.

The same relativity belongs also to pain and evil. They are incomplete good. It is true for pain and evil too that they are balanced in the final Reality, the Absolute Spirit. And so by these positive arguments Bradley makes amends for the scepticism of the first part of his book and concludes with a doctrine of human values:

'We make mistakes, but still we use the essential nature of the world as our own criterion of value and reality. Higher, truer, more beautiful, better and more real—these, on the whole, count in the universe, as they count for us. And existence, on the whole, must correspond with our ideas. For, on the whole, higher means for us a greater amount of that one Reality, outside of which all appearance is absolutely nothing. . . .

'The positive relation of every appearance as an adjective to Reality, and the presence of Reality among its appearances in different degrees and with diverse values—this double truth we have found to be the centre of philosophy.'²

Bradley's Hegelianism was far from orthodox. Like most Englishmen he found the dialectic obscure, and so his Absolute tends to reveal itself as fixed and finished, rather than in continual self-revelation. Edward Caird (1835–1908), a Balliol man who became Professor of Moral Philosophy at Glasgow in 1883, was more particularly the guardian of the Hegelian spirit. A great teacher, and a historian of philosophy, his most important contribution to English idealism was the continuation of the pioneering work of Stirling. The brilliance and lucidity of his style gave him special influence over the philosophical tendencies of his time. He it was who by his insight into the dialectic made possible many *contemporary* developments in English philosophy. If one looked at the

¹ *Ibid.*, pp. 192–4.

² *Ibid.*, pp. 350–1.

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Absolute in terms of its completion, in terms of the final and all-embracing unity by which all transient changing parts were to be explained, then, as with Bradley's point of view, the stillness or completion of the Absolute was necessarily its predominating aspect: and in one sense the flux of time and space became illusory. If however one looked at the Universe in its aspect as a forward, creative movement, then it became possible to think of that creative movement as itself the principal revelation of the nature of the Absolute. This was, without question, the doctrine of Hegel, and the theory of evolution seemed to be a graphic illustration of it.¹ The dialectical and evolutionary nature of Caird's teaching proved a vital factor in bringing into existence the 'process' school of idealists of whom Alexander, Whitehead and Temple, its most representative figures, will be considered presently. The most important works of Caird are *The Critical Philosophy of Kant* (1889, revised edition); *The Social Philosophy and Religion of Comte* (1885); *Essays on Literature and Philosophy* (1892) and his Gifford lectures on *The Evolution of Religion* (1893).

A lonely figure among idealists is John Ellis McTaggart (1866–1925), fellow and tutor of Trinity College, Cambridge, from 1897 to 1923. McTaggart published several studies of Hegel, including *A Commentary on Hegel's Logic* (1910) but in the spirit of working through the teachings of the master in order to arrive at his own viewpoint, rather than as pure exposition. His own distinctive idealism is to be found in *The Nature of Existence* of which the first volume was published in 1921, and the second posthumously, edited by C. D. Broad, in 1927. *The Nature of Existence* examines reality with a strict Hegelian logic. It reverses the order of analysis common to English philosophers by asking what existence must be in a logical sense rather than how it is given empirically. His conclusions, rather than the manner in which he reached them, are of most interest at this stage in the discussion of idealism: for he arrives, in fact, at an extremely *personalist* idealism. All reality is in essence spiritual, and what is spiritual may, and in fact does, appear as being material or 'sensal'. Within this universal spirituality there are primary parts and secondary parts. The primary parts are *selves*

¹ See Rudolf Metz's excellent essay on Edward Caird in *A Hundred Years of British Philosophy*, London, 1938, p. 286 *et seq.*

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and the secondary parts *perceptions*. The spiritual reality is therefore a *plural* reality, and solipsism therefore denied. One self does not necessarily know all other selves, nor is it necessary that it should. And the selves are in their nature dissimilar. They are not identical monads. But God, if He exists, is also a *self*. He is personal, supreme, and good, though not necessarily omnipotent or perfect morally. But if it is in the nature of one self that it cannot contain another, then God is not identical with the universe. There cannot, in fact, be a God which creates other selves if selves are themselves primary or original parts of the universe. Indeed, if selves are primary and simultaneously appearing, and if, as McTaggart maintains, time is unreal, there is no room for the postulate of a creative and ordering God: not even to justify the order and logic of the universe. He shows, by propositions whose truth is, he holds, self-evident: 'that every substance should be connected by general causal laws with some other substances. This involves that the universe is not completely chaotic. And thus it is necessary that the universe should be more or less of an ordered system, if it is to exist at all, and we have no more right to say that a God is required to keep the universe from being chaotic, than we should have to say that a God was required to keep the universe from being a non-universe.'¹ Therefore there 'can be no being who is a God, or who is anything so resembling a God that the name would not be very deceptive'. We reach then a picture of a Godless and plural universe, the primary parts of which are *selves* both uncreated and immortal: they are somehow caught up in the unity of the absolute Substance, but their importance is clearly greater than the importance of It. *They* are *Its* justification. There is a movement in this pluralistic universe. It is towards the working out of evil and the attainment of good. And 'the very greatness of evil which we endure gives us some slight anticipation of the greatness of the good which outweighs it infinitely'. But the universe is very large, and the way is long. Our field of vision is insignificant compared with the whole. There may be other beings on other planets who are working their way to the Good. 'Hegel is perhaps the strongest example of this unwillingness to accept the largeness of the universe. . . . And, while he did not explicitly place any limits to the development

¹ *The Nature of Existence*, Vol. II, Cambridge, 1927, p. 185.

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of the universe in time, he seems to have regarded its significance . . . as pretty well exhausted when it had produced the Europe of 1820.¹

The nature of the Absolute was, in fact, involving its worshippers in irreconcilable contradictions. It is difficult to explain how a changing world can be caught up in an unchanging and perfect Absolute, or a God in the process of self-creation reconciled with his own eternal Perfection, or how the (in a sense) impenetrable and transcendent self (either of man or God) can be brought into harmony with that transparency of the universe which Hegel so patently believed in and which is revealed in that quotation which Stirling put upon the title page of *The Secret of Hegel*: 'The Hidden Spirit of the Universe is powerless to resist the might of thought; it must unclose itself before it, revealing to sight and bringing to enjoyment its riches and its depths.' It was impossible to reconcile the perfect Absolute with human evil. Bernard Bosanquet, the learned follower of Green and Bradley, sought to do this in his Gifford Lectures for 1912, published as *The Value and Destiny of the Individual*, and the impasse into which he landed himself is apparent in this crucial passage:

'There is evil, then, within the Absolute, but the Absolute is not characterized by evil. That is to say, there is nothing in evil which cannot be absorbed in good and contributory to it; and it springs from the same source as good and value. If we think of good as a character of perfect experience, we cannot help thinking of evil as transcended and subordinated in it. It is true, good as good involves evil, but good as absorbed in perfection only involves evil as absorbed within good. And so, if we think of judging the universe, we should remember that our highest form of judgment is not the judgment of good and evil. . . . Our highest judgment is the judgment of perfection, and raises a different problem from the judgment of moral good and evil in their widest sense. The universe may be perfect owing to the very fact, among others, that it includes, as conditions of finite life, both moral good and evil.'²

Yet it is a somewhat casuistical argument that Perfection is Perfection just because it has so much Imperfection about it. I think we can understand why, from the turn of the century, the

¹ *Ibid.*, Vol. II, pp. 478-9.

² *Op. cit.*, pp. 217-8.

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Absolute was so much under fire. Much of the sniping came from pragmatists like the American, William James. He wrote (in *Radical Empiricism*) that the Absolute made him 'feel as if I had entered into a contract with no reserved rights, or rather as if I had to live in a large seaside boarding-house with no private bedroom in which I might take refuge from the society of the place. . . . Certainly, to my personal knowledge all Hegelians are not prigs, but I somehow feel as if all prigs ought to end, if developed, by becoming Hegelians.'¹

About the time of Bosanquet, the Absolute finally blew up. Perhaps there is a parallel to be found in the reaction of the fourteenth century to the debates of the schoolmen: as then, speculation was exhausted. No further progress seemed possible along this road. The attributes of the Absolute had been examined and re-examined, but no one had succeeded in domesticating it. That 'somehow' everything was included in the final reality to which everything was necessarily a facet or an adjective seemed a lame conclusion for a mass of brilliant scholarship: and of little or no practical consequence in the face of man's struggle to conquer nature through science, or himself through social and religious movements. And the end of the century was a practical-minded period. It is common, though perhaps facile, to trace a change of mood between the eighteenth and nineteenth centuries: the romanticism and enthusiasm condemned by the eighteenth century became the darlings of the nineteenth. In the same way, as the nineteenth century passed into the twentieth, there was another change of mood, marked philosophically by the rise of pragmatism and realism—that is by philosophies which limited themselves to what science or commonsense laid down as the given realities of experience—or by credos which looked forward to social change and sought to interpret reality in terms of it. There were ideologies which began to relate evolutionary theories to social or national aspirations, and to endow popular hopes with a cosmic mystique. In this field one effort was made to domesticate the Absolute, and to reduce its abstractions to an instrument capable of being wielded in the here and now: I refer of course to Marxism, which married the Hegelian dialectic to materialism and produced an offspring

¹ *Essays in Radical Empiricism*, London, 1912, p. 277.

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with the hoofs and tail of a satyr and the face of an angel—dialectical materialism. Dialectical materialism discovered in the kind of objective nature in which Spencer and Darwin believed, the dynamic process which for Hegel belonged to the Absolute. It is the one inheritance of German idealism still powerful in the world to-day: but it must be added that its English influence has been slight and was almost non-existent at the turn of the century.

It is possible, too, to relate the rise of pragmatism and realism to the literary and philosophical interests of the new classes which were then becoming literate. But had they any philosophical interests? If anyone doubts whether the readers of *Tit Bits*, the *Clarion*, and the *Strand Magazine* had philosophical interests of (in a limited field) a very strong nature, let them enquire into the sale of Robert Blatchford's *Not Guilty* (which argued like Robert Owen that no man could be held guilty of a crime, for he was what his environment had conditioned him to be) or into the sales of those cheap books produced by scores of secular and rationalist societies propagating materialist and evolutionary philosophies.

Perhaps, too, the collapse of idealism as a great school of philosophy in England was not unconnected with the First World War. This threw a fierce light on German scholarship. Even popular papers carried hostile expositions of the doctrines of Nietzsche. German was banned in the schools, and the teachings of Fichte and Hegel caused a connection between the Absolute and absolutism to be traced.

The blowing-up of the Absolute had its amusing side. The worldly kind of wit which found the picture of Bishop Berkeley, the immaterialist, stubbing his toe as he got into bed uproariously funny, was tickled also by the thought of philosophers who walked about our earthy world convinced that all was Idea and wrapped up in contemplation of the Absolute. H. G. Wells, in one of his richly comic early novels, *Beauly*, invented a pompous Hegelian Lord Chancellor:

"The Lord Chancellor was no mere amateur of philosophy. His activities in that direction were a part of his public reputation. He lectured on religion and aesthetics. He was a fluent Hegelian. He spent his holidays, it was understood, in the Absolute—at any rate in Germany. He would sometimes break into philosophy at dinner

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tables and particularly over the dessert, and be more luminously incomprehensible while still apparently sober, than almost anyone. An article in the *Hibbert* caught and held his attention. It attempted to define a new and doubtful variety of Infinity. You know of course that there are many sorts and species of Infinity, and that the Absolute is just the king among Infinities as the lion is king among beasts. . . .¹

Fetching a decanter of whisky at night the Lord Chancellor is butted in the Absolute by something which feels like a poltergeist—something round and hairy like the worn end of a broom: it is the head of the pantry boy, recklessly escaping the wrath of the butler. And perhaps in H. G. Wells's comic genius there is even a kind of parable, for by 1914 the world was full of escaping pantry boys and shop boys. They had become literate, and science was displaying its glittering prizes and sharp swords before them. And they were, in that generation for which H. G. Wells was the true spokesman, butting away at all sorts of problems in a pragmatical and un-Hegelian spirit, and beginning a little truculently and unreasonably to demand that philosophy should not only explain the world, but change it.

¹ *Bealby*, London, 7th edn., 1924, pp. 28-9.

CHAPTER FOURTEEN

The New Realism

G. E. MOORE (b. 1873)
LUDWIG WITTGENSTEIN (1890-1951)

The deflation of the Absolute was also the work of G. E. Moore, and the school of New Realism which he founded in answer to idealism still informs the philosophy of this country. George Edward Moore was born in 1873 and educated at Trinity College, Cambridge. He was afterwards Fellow of the same College, then Lecturer in Moral Science at Cambridge. He became Professor of Philosophy in 1925. In 1903 he contributed to *Mind* an essay entitled 'The Refutation of Idealism' which proved a turning-point in English philosophy. This essay reverted to the commonsense empiricism of Locke and Reid, and argued the independence of the object from the consciousness, a return most necessary if science and philosophy were not to be completely estranged, for the rise of English idealism had been without influence upon science and was alien to its presuppositions. The natural sciences insisted upon the objective reality and independence of matter. And so far had this insistence gone that the *observer* of the behaviour of matter (the subjectivity, that is to say) had come to be counted as of less importance than the material events it observed. It was they which possessed superior predictability, were more easy to manipulate, and therefore of higher reality. With idealism, however, the superiority of the subject, of the consciousness, and the dependence of the object, were taken for granted. And it is with this point that Moore begins his epoch-making analysis.

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Modern idealism asserts that the universe is spiritual. Though therefore tables and chairs appear to us to be one sort of thing and our experience of our minds another sort of thing, idealism argues that fundamentally they are the same sort of thing. According to idealism, Moore writes, 'the universe is very different from what it seems' and 'it has quite a large number of properties which it does not seem to have'. Commonsense and idealism part company, and the universe as revealed by idealism does not appear to be the universe which everyone takes for granted in daily experience. This is a most serious matter, for all philosophy must ultimately speak of, and to, common experience.

To make clear what is being asserted by idealists, and to demonstrate how illegitimate are their assertions, Moore analyses the meaning of '*esse* is *percipi*'. He regards '*esse* is *percipi*', which is the dependence of the object on the subject, as the basis of most idealisms. Is it the case, he asks, when we assert that *esse* is *percipi* that the copula, the *is*, means that there is absolute identity between *esse* and *percipi*, that they are interchangeable terms? If the statement is a mere definition of a word by its synonym there would be little point in making the statement. It would be tautological. However, a second meaning to the assertion could be that *esse* and *percipi* are not quite identical but that *esse* includes as one of its properties, *percipi*. But that would be equivalent to saying that *esse* is something else besides *percipi*, and that does not appear to be intended either, for then to say that a thing was real would not be the *same* thing as saying that it was experienced. Reality might include more than experience. Analysis along these lines makes possible consideration of a third meaning, that '*esse*' and '*percipi*' form part of an organic whole. 'If the assertion that *percipi* forms part of the whole meant by reality is to have any importance, it must mean that the whole is organic, at least in this sense, that the other constituent or constituents of it *cannot* occur without *percipi*, even if *percipi* can occur without them.'¹ This is the only important meaning of '*esse* is *percipi*', that wherever you have the property *esse*, it is experienced. But such a principle, if it is not also to be tautological, 'asserts two distinct terms to be so related, that whatever has the one, which I call *esse*, has *also* the property that it is experienced. It

¹ *Philosophical Studies*, London, 1922, p. 10.

asserts a necessary connection between *esse* on the one hand and *percipi* on the other; these two words denoting each a distinct term, and *esse* denoting a term in which that denoted by *percipi* is not included.¹

The idealist is able to maintain that object and subject are indissolubly connected only because he fails to see exactly what is taking place in perception. He fails to see that between 'yellow' and 'sensation of yellow' there is a difference. If yellow and the experience of yellow are identical, *really* identical, then there is no difference between *yellow* and *experience*—they are one and the same thing. It is only by the vagueness or transparency which attaches to experience (as against the sharpness of yellow, the *what* of experience) that this mistake can be made. But either experience is unique and separate, or *experience of yellow is the same as yellow*. Both propositions cannot be admitted. If experience of yellow is indistinguishable from yellow how is it possible to know that there is such a thing as experience?

The sensation of blue differs from the sensation of green. But they are both *sensations*. What is it that they have in common in being sensations, since the content is so different? Moore says it is 'consciousness'. The common denominator of the two sensations is the consciousness. If both blue and green are consciousness then the situation is still more absurd. But if they are the *experience* of consciousness, then they can be separated from the consciousness, and from each other. Of subject and object, then, 'There remains the question: Do both exist? Or does consciousness alone? And to this question one answer has hitherto been given universally: That both exist.'²

The error into which philosophers have fallen is to suppose that there are such things as mental images. They have imagined that we perceive a mental image of *blue*, for example, and then find it incredibly difficult to think of blue apart from the supposed mental image of it. But no mental image stands between us and reality. The sensation of blue is a direct experience of blue, a blue awareness, but not awareness of a mental image of blue. The relation between blue and the sensation of blue 'is just that which we mean in every case by "knowing". To have in your mind "knowledge"

¹ *Ibid.*, p. 11.

² *Ibid.*, p. 20.

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of blue, is *not* to have in your mind a "thing" or "image" of which blue is the content'.¹

If it turned out that a sensation was nothing more than the content of the idealist's consciousness and could not be separated from it, then it is difficult to see how the idealist could be aware either of himself or of anything at all. Equally, if all experience comes from his own consciousness he can have no knowledge of other minds and must reach the solipsistic conclusion that all reality is contained within him, however much he resists it. If, on the other hand, consciousness is not simply creating its own contents, *what* is it experiencing? Experience is *of* something—the sensation's *object*. Even idealists, if they are not to maintain absurd positions, are compelled to admit that some things exist of which they are not aware. For idealism assumes that things are not winked in and out of existence according as to whether they are in the consciousness or not. They assume other minds, and God, as contemplating these things, and so guaranteeing the continuity of existence, though it is just these activities on the part of other subjects which they cannot, after all, directly *know*. 'And what my analysis has been designed to show is, that whenever I have a mere sensation or idea, the fact is that I am then aware of something which is equally and in the same sense *not* an inseparable aspect of my experience.'²

The commonsense point of view, which is also the scientific point of view, about the independence of matter is thus established. A theory of awareness is formulated by Moore which maintains that the object present to my consciousness 'is precisely what it would be, if we were not aware'.

Precisely? In a paper 'The Status of Sense-Data' read to the Aristotelian Society some ten years later Moore shows how subtly his thought had moved in the interim. What is the relation between sense-data and the object which our consciousness recognizes through that data? It is clearly easy enough to speak of a simple confrontation of object when it is the colour yellow or green we experience, but it is obvious that our minds perform far more complicated acts of recognition upon extraordinarily scanty evidence. Moore expresses himself puzzled by the whole process especially

¹ *Ibid.*, p. 25.

² *Ibid.*, p. 27.

as to how 'particular sensibles [his term for sense-data] are related to particular objects'.

He provides a useful illustration. Suppose, he writes, that I am looking at two coins on the ground, one a half-crown and the other a florin. I am looking at them obliquely so that they both form ellipses and do not appear in the least circular. Moreover, the half-crown is farther off, and so looks smaller than the florin. By what process, he asks, do I recognize that I am seeing two coins, that they are *really* circular and not elliptical, that one is larger than the other although it now looks smaller, and that they have an inside and an underside of which I am not aware? Do we make a distinction between what is true in my *private* space, and what is true in *physical* space? Perhaps, he argues, what we really mean in those circumstances by 'seeing' is a most complicated hypothetical judgment, such as that, if I were to move my body in certain ways, I should see the coins in other shapes and relations, or make tactal contact with them which would expose properties not to be apprehended by the eye, and so by changes of position and approach reveal all those physical properties subsumed when I first glanced at the coins.

Moore prefers to leave the question unsolved, and it is insoluble (except possibly on the lines of Bertrand Russell's development of *private* and *physical* space and properties¹) but it leads to a certain *representationalism*, that what is perceived is representative of the whole thing and is the occasion of our recognition of it, though 'thing', 'whole', 'representative' and 'recognition' tend the more to elude us, the more they are pursued.

Moore's writings upon perception and related problems are few and are collected in *Philosophical Studies*. His only remaining works are *Ethics* and *Principia Ethica*. In his ethical theories he broke away decisively from the hedonism of the utilitarians, exposing its hollowness shrewdly. The conclusion he reached about *goodness* or *the good* was that it was a direct experience, no more to be argued away than the quality *yellow*, and that it was only to be dismissed if one made it dependent on something else. Once indeed one started to argue that *good is this*, or *good derives from that*, then one is in danger of falling into a trap such as '*esse est percipi*' lays for philo-

¹ See p. 327 *et seq.*, *infra*.

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sophers, of striving to prove that something is not itself, but something else. Good, Moore argues, simply cannot be defined: it is itself and nothing else.

Like other values, the good is *intrinsic*. Moore opposes intrinsic both to *objective* and *subjective*. He instances evolutionary theory. In evolutionary theory it is argued that one type of human being *A* is 'better' than another type *B* because it is type *A* which flourishes and reproduces while type *B* does not. This is an example of an objective theory of the good. But the betterness of *A* is decided not by anything which *A* necessarily possesses or does, but by the rules of the game. Change the rules and then type *B* might be better than type *A*. In other words so apparently objective a measurement of the good as evolutionary theory suffers from the same objection which can be registered against *subjective* judgment: that the thing which is judged better on one occasion may be judged worse on another. Just so, the *subjective* judgment will change from person to person, and in one person from time to time. Neither in the case of the judgment of evolutionary theory, nor in the case of a purely subjective decision would goodness arise from something intrinsic to the thing itself. In which case goodness would be something purely relative, which the theory of the intrinsic good, of course, denies. But 'intrinsic' is itself a predicate which involves difficulties. Moore therefore sets up a definition: 'To say that a kind of value is "intrinsic" means merely that the question whether a thing possesses it, and in what degree it possesses it, depends solely on the intrinsic nature of the thing in question.'¹ Not very satisfactory, but at least on this definition it is impossible for the thing at one and the same time to possess the value, and not to possess it, or for it to possess it under one set of circumstances and not under another. Goodness becomes an absolute with a little 'a'. The definition not only affirms that the thing itself must possess this intrinsic value, but that anything like it must also possess it:

'Suppose you take a particular patch of colour, which is yellow. We can, I think, say with certainty that any patch exactly like that one, *would* be yellow, even if it existed in a Universe in which causal laws were quite different from what they are in this one. We can say that such patch *must* be yellow, quite unconditionally,

¹ *Ibid.*, p. 260. Italicised in the original.

whatever the circumstances, and whatever the causal laws. And it is in a sense similar to this, in respect of the fact that it is neither empirical nor causal, that I mean the "must" to be understood when I say that if a kind of value is to be "intrinsic", then, supposing a given thing possess it in a certain degree, anything like that thing *must* possess it in the same degree.¹

And this *intrinsicness* or absoluteness of good Moore opposes to the ethical systems of Spinoza, Kant, Hegel, Green and Bradley. Rather dogmatically, *absoluteness* is also awarded to the experiences of common sense in the later developments of Moore's philosophy. The commonsense experience is what, intrinsically, it means. In an address to the British Academy of 1939, entitled 'Proof of an External World',² Moore argued in effect that our manner of speaking itself implies the existence of an external world. If thus we say 'That is a soap-bubble', then what is implied in the assertion is precisely that there is this physical structure, a soap-bubble, which existed before being perceived, and will continue to exist after perception is diverted from it. 'Soap-bubble', or some other name for a perceived physical structure, carries just such implications of identity, permanence and externality with it. The proposition 'That is a soap-bubble' is equally the proposition, 'That soap-bubble is an external object'. But it is one thing to say that such statements carry commonsense implications about the externality of the objects we are talking about, it is another to *prove* their externality. The philosopher demands proof, and Moore does not believe that this can be given, either of particular or general statements: 'if this is what is meant by proof of the existence of external things, I do not believe that any proof of the existence of external things is possible.'

The difficulties of his situation were apparent in an earlier essay, 'A Defence of Common Sense'³ in which he wrote, 'Such an expression as "The earth has existed for many years past" is the very type of an unambiguous expression, the meaning of which we all understand. Any one who takes a contrary view must, I suppose, be confusing the question whether we understand its meaning (which we all certainly do) with the entirely different question

¹ *Ibid.*, pp. 268-9.

² *Proceedings of the British Academy*, Vol. XXV, pp. 273-300.

³ *Contemporary British Philosophy*, Series 2. Ed. by J. H. Muirhead, 1925, pp. 193 *et seq.*

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whether we *know what it means*, in the sense that we are able to give a correct analysis of its meaning.' Here, in Moore's hands, *understanding* and *knowing* become different tasks in the sense in which Wilhelm Dilthey might have approved: but Moore's opposition of them is rather a dubious one. However, his insistence that understanding of statements is one thing, and analysis of their logic and structure is another, helped to bring logical positivism and other schools of analysis to birth.

In the year in which Moore published his *Philosophical Studies*, Ludwig Wittgenstein published *Tractatus Logico-Philosophicus* and *Sartor Resartus* came to life in that most strange blend of symbolism, mysticism and plain commonsense. Wittgenstein's definition of logical and mathematical truth as tautological, simply carried to its logical conclusion the tendencies of the mathematicians and logicians of the day, notably Russell and Frege, whose work he discusses. Like Moore, Wittgenstein gave a tremendous impetus to the analytic movement. Of particular interest, I find, is his belief that there is a relationship of form or structure between the external reality and the language which describes it. He uses the illustration of music: 'The gramophone record, the musical thought, the score, the waves of sound, all stand to one another in that pictorial internal relation, which holds between language and the world. To all of them logical structure is common.'¹ In the same way in which the musical score is a 'picture' of the music, and the gramophone record's groove yet another 'picture', so language, or at least the language of propositions, rests on 'the logic of representation'. We are urged to consider the nature of hieroglyphic writing 'which pictures the facts it describes', and how from it came the alphabet, and how from that we are able to understand the sense of 'the propositional sign' without having it explained to us. It is implied therefore that *the proposition* is a picture of reality in much the same sense: 'it shows its sense.' Propositions create a logical scaffolding which helps to construct a world. The sum of propositions is the language. It would therefore seem that the sum-total of language equals the known world, and mirrors its structure. But Wittgenstein appears, if I understand his difficult book aright, to retreat from this position. Logically, indeed, he must, or approve language as it

¹ Op. cit., London, 1922, p. 65.

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stands as exact, and in no need of correction. But this is far from his intention. Language is therefore distinguished by him from *colloquial* language: language in the colloquial sense disguises thought; it is so complicated that the forms it clothes cannot easily be inferred. Confusion therefore follows, and Wittgenstein asks, like Bishop Sprat, for a purification: it is necessary to construct a language all symbolism in which a sign stands for one thing only—‘A symbolism, that is to say, which obeys the rules of *logical grammar*—of logical syntax’.¹ The logical symbolism of Frege and Russell cannot be used, for it does not exclude errors.

For a guide to Wittgenstein’s abstruse symbolism I must refer the reader to Bertrand Russell’s introduction to *Tractatus Logico-Philosophicus*. And Russell’s own survey of logic and language, *An Inquiry into Meaning and Truth* (1940) should be consulted. Suffice to say that Wittgenstein’s uncompromising rejection of the theories of causation, his perfection of the Frege-Russell symbolism, and his neo-solipsism,² caused a sensation in the philosophical world of the twenties. It is something of a relief to find that his own arguments are not obedient to his laws, that they are in fact dogmatic and quasi-metaphysical. He recognized this, and conjured the reader in this fashion:

‘My propositions are elucidatory in this way: he who understands me finally recognizes them as senseless, when he has climbed out through them, on them, over them. (He must so to speak throw away the ladder after he has climbed up on it).

‘He must surmount these propositions; then he sees the world rightly.

‘Whereof one cannot speak, thereof one must be silent.’³

¹ *Ibid.*, p. 55.

² *Ibid.*, p. 151: ‘In fact what solipsism *means*, is quite correct, only it cannot be *said*, but it shows itself.’ P. 153: ‘Solipsism strictly carried out coincides with pure realism.’

³ *Op. cit.*, p. 189. Cf. *Philosophical Investigations*, Ludwig Wittgenstein, Oxford, 1953, published since this was written.

CHAPTER FIFTEEN

Space-Time Philosophers

ALBERT EINSTEIN (b. 1879)

SIR JAMES JEANS (1877-1946)

SIR ARTHUR EDDINGTON (1882-1945)

SAMUEL ALEXANDER (1859-1938)

ALFRED NORTH WHITEHEAD (1861-1947)

The problems raised by G. E. Moore were not the only hurdles the system-makers of this century had to climb. For our times, too, have produced their scientific revolution which tumbled over the gravitational theories of Newton, the ether theories of the nineteenth century, to say nothing of commonsense notions of time and space. System-makers have been compelled to reconcile the evolutionary theories which arose out of the biology and geology of the nineteenth century with the astro-physics and atomic physics of the twentieth century. At the same time the theory of space-time associated with the name of Minkowski, and the special and general theories of relativity advanced by Einstein have had to be, somehow or other, brought into harmony with 'realistic' approaches to matter, life and mind. Intellectual labours on a heroic scale were demanded!

The theories of relativity arose out of the famous Michelson-Morley experiments into the consequences of the motion of bodies through the supposititious ether. The first experiments were carried out in 1881, those in which Professor Michelson was assisted by E. W. Morley, in 1887. Michelson constructed an apparatus which consisted of two arms, equal in length, at right angles to each other. At the end of each arm was a mirror to which a beam could be sent from the junction of the two arms, which we will call *A*. A

beam of light directed from *A* to the end of one arm (*B*) and reflected back to *A*, and then to the end of the other arm (*C*) and similarly reflected back to *A*, ought to take exactly the same time in each case if the whole apparatus is at rest in the ether. But if the apparatus is moving through the ether—let us say, in the direction *AB*, which is along one arm, then the ray of light should take longer to pass from *A* to *B* and back again, than to pass from *A* to *C* and back again, on the analogy that it takes longer to swim a certain distance against the current of a river and then back to the starting point, than it takes to swim that same distance *across* the current both ways. It was thought that by measuring the difference in time taken by two beams of light, one to and fro along the line of the earth's movement through the ether, and the other across the line of its motion, the speed of the earth's motion through the ether would be disclosed. But the speed was the same in each case: no difference was detected between speed along *ABA* and *ACA*, though the experiment was many times repeated. This was a blow to the ether hypothesis, for it pointed to its non-existence, and it set going the whole relativity theory.

Two other mathematicians, Fitzgerald and Lorentz, suggested a reason for the negative results. Perhaps, they argued, the measuring apparatus itself is deformed, or shortened, in the direction of its motion through space, and this falsifies the measurement of the beam through *ABA*, while it does not affect measurement of the beams of light across space at right-angles to the direction of the moving apparatus. A contraction of a certain degree would exactly account for the negative results of the experiments. But experiments to get round this deformation, if such it was, were equally without success. No experiment which could be devised produced anything but a negative result, and it was in 1905, speculating upon this in a technical paper contributed to a professional journal, that Albert Einstein, then an engineer in the Swiss Patents Office, formulated his relativity hypothesis in the form 'Nature is such that it is impossible to determine absolute motion by any experiment whatsoever'. Rest and motion became relative terms. And H. Minkowski, some four years after Einstein's first paper, showed that the theory of relativity was more securely based if we assumed that events were occurring, not separately in the three dimensions of space

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and one of time, but in a single space-time continuum, a continuum so completely united that it was impossible to separate it into its supposed parts. Further papers appeared in which Einstein elaborated his theory. A. S. Eddington and H. Wheyl contributed to the theory by research and published analyses. It was Eddington who led the Brazil expedition of 1919 which established, during the eclipse, that light was deflected by the mass of the sun's gravitational field. Einstein's *Relativity, The Special and the General Theory* was published in 1920, and his *The Meaning of Relativity* in 1922. The consequence of this scientific revolution was to destroy the Newtonian conception of a physically discrete world occupying three dimensions of space against the background of absolute and neutral time. 'Time,' Einstein wrote, 'is robbed of its independence.' Instead of alien and unconnected space and time, the theory of one space-time continuum was advanced: the continuum was to be described, of course, in terms of four co-ordinates, not three. The fourth co-ordinate was the time co-ordinate. And it turned out, by the theory of relativity, that nothing was finally measured in terms solely of space, or dated solely in terms of time. It was only when events were described in terms of space-time that they became commensurable—that a measure was being used which was the same for all events or things.

The absolute nature of time, tacitly assumed by physics, disappeared. In a famous illustration Einstein speaks¹ of two flashes occurring at two points, A and B, on a railway embankment. The flashes are simultaneous in relation to a point, M, equidistant between them on the embankment. But now let us suppose a train moving beside this embankment and an observer seated in the train at a point M' exactly opposite the point M. Will the flashes of lightning be simultaneous to him? The answer, indeed, is no. If he is travelling towards the point B the flash of lightning at B will appear to him to precede the flash at A. If therefore the incident is timed from these two points of observation, the train (M') and the embankment (M) different results will be obtained. There is a second example of the man who stands at the window of a moving railway carriage and drops a stone. The stone appears to fall in a

¹ *Relativity: The Special and the General Theory*, London, 1920. Tr. R. W. Lawson, p. 25.

straight line. But to an observer on an embankment, it must appear to describe a parabola. Which description of the path of the fall is a true one? If in the first illustration absolute time was dethroned in favour of a time relative to the movement of the body of reference, so in the second absolute space was similarly dethroned: the nature of space, too, was relative to the motion of the body of reference.

This was not all. Relativity experiments pointed to the deformation of matter itself by motion: the mass of a body appeared to vary with its speed. An extraordinary universe began to emerge from these hypotheses, as for example that space was curved. Space was not neutral or absolute, but was affected by matter. Light traversing space could be bent by what might be described as the deformation of space by great masses of matter. The Newtonian theory required a universe with a more or less definite centre at which the density of its stars was at its greatest. From this it followed that to proceed outward from this centre was to strike into thinner and thinner densities until finally empty space was reached. The Newtonian universe was like the earth, most dense at its core and surrounded by spheres of diminishing density until empty space was reached. But such a finite material universe, Einstein pointed out, was uneconomical: blazing its light out into the emptiness in which it was finally lost, it was 'destined to become gradually but systematically impoverished'. Einstein's speculations led him to suppose a finite yet unbounded universe in which space returned upon itself and in which, indeed, 'the geometrical properties of space are not independent, but are determined by matter'. Such a universe needed no Newtonian centre, and it alone could account for the behaviour of light.

These hypotheses were destined to have an effect on philosophy almost as great as that of Newtonian physics. Alexander Pope's epigram 'God said, *Let Newton be!* and all was light' deserved the retort of J. C. Squire:

*It did not last: the Devil, bowling Ho!
Let Einstein be! restored the status quo.*

And Sir James Jeans has written this vivid description of what the universe now began to look like:

'What we have hitherto spoken of as the propagation of energy,

such as the passage of sunlight from sun to earth, now reduces to nothing more than the continuity of a corrugated crumpling along a line of the continuum which extends over about eight minutes of our terrestrial time and about 92,500,000 miles of our terrestrial length. We now see that we cannot picture it as the propagation of anything concrete or objective through space unless we first divide the continuum objectively into space and time, and this is precisely what we are forbidden to do.

'To sum up, a soap-bubble with irregularities and corrugations on its surface is perhaps the best representation, in terms of simple and familiar materials, of the new universe revealed to us by the theory of relativity. The universe is not the interior of the soap-bubble but its surface, and we must always remember that, while the surface of the soap-bubble has only two dimensions, the universe has four—three dimensions of space and one of time. And the substance out of which this bubble is blown, the soap-film, is empty space welded on to empty time.'¹

The picture of reality displayed by atomic physics was just as confusing. Newtonian physics had dealt with such comforting certainties as mass, speed and location. And as Sir James Jeans explained, a sufficient account could be given of a particle such as an electron if its speed of motion and position in space were known, together with any forces which might be brought to bear upon it during its passage. But it was precisely these data which were unobtainable about the electron. If its position in space could be determined, the speed at which it was moving could not be known: on the other hand determination of its speed precluded the fixing of its position. One could know one, or the other, not both facts simultaneously. So what then was the electron, as scientifically known? It was hardly surprising that some physicists (Bohr, for instance) suggested that its nature was such that it could not be measured within the space-time network. The quantum theory added another kind of notion—of the fundamental discontinuity of physical forces. The theories of fluxions and of infinitesimals which aroused Bishop Berkeley's wrath had assumed *continuity* in forces, of increases in velocity for example of so continuous a nature that infinitesimal divisions were possible which would still yield the

¹ *The Mysterious Universe*, Cambridge, 1930, end of Chap. IV.

same accuracy. But the quantum theory suggested that, in the emission of energy, for instance, there was a basic unit, a quantum constant, and that all emissions had to be measured as integral multiples of that unit, and that no intermediate measure such as, for example 1.05 of the given unit, or even 1.50 was possible. This raised problems concerning the behaviour of the electron within the atomic system. When an atom gives off light it is because it is parting with an amount of energy equal to that of the light-wave. But *how* does it part with the energy? It appears to do so by a change of orbit of the electrons. If however the light or energy emitted is measurable in regular quanta or pulses which are discontinuous, then the electrons must move in orbits which correspond to this limitation. They cannot move as a speck of matter moves in a vortex or whirlpool, in a continuous path which may take it from the periphery to the centre. No, the electrons must move in a limited number of orbits, which are discontinuous. The electron must vanish from one orbit and reappear in another. In fact it became in the end unwise to seek to form a structural picture of the atomic system, and better to measure it simply as a source of energy.

Heisenberg was led by the knowledge that, as Jeans picturesquely puts it, nature is 'loose-jointed', that is, that it is not tightly-organized, and even appears to abhor accuracy, to formulate his 'principle of uncertainty' which is still giving trouble to physicists. The principle of uncertainty can be applied to atomic phenomena in general; observations made on any atomic system will not be determinate: an experiment repeated many times will produce different results each time. All that appears possible is statistical accuracy—that the mathematical laws of average will yield a determinism which the physical laws themselves fail to provide. Yet if entities existed in the atomic world, but could not be fixed properly in time and space, and if the entities and energy proved to be alternate aspects of the same 'force', and if events took place in the apparent absence of causal laws, then a new and exciting view of the atomic ground of nature was possible. It was feasible to imagine, without falsification of the facts, a principle of origination or of self-determination in the smallest particles of force-systems known to man. It was possible to throw overboard the physical conception of locus in space and instant in time enjoyed by solid substances of a

fundamentally indestructible and inert nature. The matter which had bothered both materialists and idealists could go. *All* could go! But what could take the place of these ancient physical certainties? Radiation? Energy? Lines of forces? Wave mechanics? Complexes of 'events'? This was the challenge which the philosophers of the twentieth century had to face.

Their task would have been easier in some ways if the new physics had not been challenged to declare whether what was now claimed to be *known* was *real*, and not merely *symbolic*. We recall Sir Arthur Eddington's epigram, 'We reconstruct the creature whose footprints we have found, and it turns out to be ourselves'. Sir Arthur reached idealist conclusions, but it was not necessary to go all the way with him in order to question the significance of the new discoveries. *Were* they discoveries of reality, or were they convenient formulations, abstract conceptions, necessary to isolate certain phenomena and facilitate their measurement? Ernst Zimmer, in the *Revolution in Physics*¹ has said that in the present stage of science, mathematical symbols such as the wave equation of Schrödinger have ceased to be tools and become ends in themselves. Schrödinger's waves, 'are almost more than form. They are a form to which we can ascribe no substantial content, or at least only one of a psychical nature. For one cannot find this something that undulates. We can only interpret them as *waves of probability*.' The same ambivalence is seen to attach itself to almost all the mathematical equations descriptive of the new physics. There is a doubt as to whether what we might call the mathematical foundation of the new physics describes anything but itself. As I wrote elsewhere² it is almost as if all we know is something we have invented to know, and this is what Eddington's epigram implies. Suppose men were invisible, yet able to go about their normal tasks. Then suppose that an observer arrived from Neptune on this planet. He would witness everywhere certain activities—the growth of crops, the movement of ships, the erection of buildings—which might lead him to suppose the existence of a causal agency or agencies. He might, by many devious routes, eventually award this

¹ London, 1936, p. 210.

² *The Meaning of Human Existence*, London, 1948, p. 35. The illustration which follows is taken from this work.

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unknown agency a symbol to illustrate the size of it, and the energy at its disposal. But that symbol would not be a man, it would simply stand in the place of an unknown. It would help the Neptunian to make certain calculations and predictions, but it would not reveal the unknown man to him. And this what has occurred with atomic physics. We can award the forces we encounter a mathematical value, and sometimes, by analogy, we can construct a model to give us a picture of what we think is going on, but that is all. We shall be mistaken if we assume that either symbol or model are 'reality', or, if we accept that they are a *part* of 'reality', that they are the whole of it. For the difficulty is not ended by the discovery that the relationship of symbol or model to 'reality' does not give us a photo of reality, but is more like a caricature than anything else; there is another consideration—just as an ordinary photographic plate picks out the blacks, whites and greys of reality, and ignores all else, so our scientific instruments and techniques represent 'reality' in terms of their own limitations, and perforce leave out all else.

No modern scientific philosopher has more sharply exposed the dubious nature of the world revealed by science, than Sir Arthur Eddington. It has no substance, no matter, it is a mere shadow of reality, a world of symbols, formulae, equations, a featureless universe of bleak abstractions of the kind which compelled Max Eastman to exclaim, 'No complete and living man who wishes to imagine what he knows, will be content to live in such a universe. He will find his way out.'¹ And it excites Sir Arthur Eddington to say, in *The Nature of the Physical World*, that 'life would be stunted and narrow if we could feel no significance in the world around us beyond that which can be weighed with the tools of the physicist or described by the metrical symbols of the mathematician'.²

The new physics is not on that account to be despised. It provides, Eddington says, 'a highly perfected answer to one specialized problem which confronts us in experience'. But as the phrase just quoted proves, it is an answer which it is only worth while making because it is important to *someone*. There is a 'something' which strives for knowledge, a 'something to which truth matters' and the

¹ *Marxism, Is it Science?* London, 1941, p. 259.

² Op. cit., Cambridge, 1928, p. 317.

hub of reality is the question-asking, truth-seeking spirit of man. The knowledge of physics is far too limited to embrace that human world. The value of physics lies in its use as a pointer to the spirituality of the universe, of the universe as perhaps the thought of God. 'I assert that the nature of all reality is spiritual, not material, nor a dualism of matter and spirit. The hypothesis that its nature can be to any degree material does not enter into my reckoning, because as we now understand matter, the putting together of the adjective "material" and the noun "nature" does not make sense.'¹ And out of such conclusions Eddington moves to a defence of the religious experience, and a justification of the apprehension of the Godhead upon grounds which science by its nature is incapable of accepting or comprehending. However, the new physics, though it throws no light upon the religious experience, favours rather than discourages a religious interpretation of the universe. Eddington's sometimes naïve Kantianism has many times come under fire, but his attack upon the abstract and unreal nature of so much scientific theorizing is a most important one, and is not to be brushed aside. Until the relation of 'reality' to the scientific descriptions of it is satisfactorily settled (if ever it can be), all speculative philosophy which relies upon scientific evidence is perilously founded. One may put it this way;—one may accept sense-data as mirroring reality, and the scientific discoveries about what lies beyond them as symbolic constructions; or, secondly, one may accept the evidence of science as to what constitutes reality, and then the world revealed by sense-data becomes a theoretic construction, differing seriously from the actuality; or, thirdly, one may argue that both the world of sense-data and the world of scientific discovery are remote from actuality. In the latter case one reaches the Kantian conclusion of the unknowability of the thing-in-itself.²

Samuel Alexander was the first philosopher to seek to build a

¹ *New Pathways in Science*, Cambridge, 1935, p. 319.

² In addition to the books named in the text these should be consulted: *The Philosophy of Physical Science* (1939); *New Pathways in Science*, Sir A. Eddington (1935); *The Universe in the Light of Modern Physics*, Max Planck, inventor of the quantum theory (1931); *Atoms and Cosmos: The World of Modern Physics*, Hans Reichenbach (1932), which gives an account of the debate over physics in the twenties and thirties; *The Structure of the Universe*, G. J. Whitrow (1949); *The Nature of the Universe*, Fred Hoyle (1950).

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system founded upon the space-time universe of Minkowski. He did so with the most extraordinary eclecticism, for he wedded to space-time physics the theories of emergent evolution popular in the first decades of this century, the empiricism of Locke, the categories of Immanuel Kant, the utilitarianism of Jeremy Bentham and John Stuart Mill, the realism of G. E. Moore, the Absolute of Bradley and Bosanquet, and the angels of Aquinas. Nothing indeed was allowed to escape his net; and few more determined efforts have been made in the modern world to end the traditional differences in philosophy through one grand reconciliation. The result is intellectually impressive and the writing has often the warmth and ardour of poetry.

Samuel Alexander has also the distinction of heralding the entry of Australia into philosophy, for, a Jew, he was born at Sydney in 1859. He was a brilliant, precocious pupil, and came to England to study in his eighteenth year. He won a Balliol scholarship and was afterwards made a fellow of Lincoln College, Oxford, the first Jew to be so honoured. His life was passed browsing in quiet academic pastures, for he became Professor of Philosophy at Manchester University. He died in 1938 after many honours, including the Order of Merit, had been showered upon him.

He begins, in that work which made him famous, *Space, Time and Deity* (1920), based upon his Gifford lectures for 1916-18, with an assertion of a realist position. He accepted 'the democracy of things' rather than the autocracy of mind. Minds were not the source of all reality, but on an equal footing with other existences. 'Minds are but the most gifted members known to us in a democracy of things.' He would therefore be happy to get rid of such terms as *idealism* and *realism* altogether. He, at any rate, does not propose to waste time on the discussion of the superior reality of mind or objects, but will make the assumption common to experience and to science that they are equally real, and then follow whither this hypothesis leads.

In fact, in his theory of compresence, he rather goes beyond the hypothesis. Mind and the objects it contemplates are compresent to one another. 'There is nothing in the compresence between the mind and its [external] objects to distinguish that relation from the compresence between any two objects which it contemplates, like

the tree and the grass.¹ Indeed, to a superior being, my consciousness and the tree would be compresent, just as the tree and the grass are compresent to me: in other words they would *both* be objects. One might, Alexander suggests, imagine an angel as the superior being to whom my consciousness and the tree would both be objects whose compresence he could contemplate. He would perceive them and relate them, though he would recognize the distinction between the *terms* related. But such an assumption immediately raises the problem of space and time. For if the consciousness is outside space and time, but the tree is within it, then in what sense are they compresent? Alexander proceeds to argue that both are products of space-time: like the tree, the mind itself occupies space. 'Space and time may be in some peculiar fashion basic to all being.' And the course of his analysis leads him to the view that space and time are not simply relational. They are not, that is to say, just convenient mental formulations to explain the side-by-sideness, or the succession of things, but can be held to be the creative principles of the universe: 'the stuff or matrix (or matrices) out of which things or events are made, the medium in which they are precipitated and crystallized' . . . 'finites are in some sense complexes of space and time.'²

Such suppositions involve a new conception of the relationship between space and time, and as with Einstein's relativity, the neutrality of each is destroyed. If, Alexander argues, we experienced Time as pure temporality, that is as a pure succession of instants or moments, every instant would in fact be lost to us as it passed, and that which distinguishes time for us, the sensation of continuity, of the past carried forward into the present moment of time, would be impossible. To establish continuity, another form of being is necessary upon which Time *registers* its moments: 'Space supplies us with the second continuum needed to save Time from being a mere "now".'³ And by the same token Space, just as Space, is a mere spatial blank, a vacuum. What distinguishes one 'place' from another? There has to be such a distinction, for 'a continuum without elements is not a continuum at all'. Time is such an element. 'It follows that there is no instant of time without a position in space

¹ *Space, Time and Deity*, 1920, p. 26.

² *Ibid.*, p. 38.

³ *Ibid.*, p. 46.

and no point of space without an instant of time. I shall say that a point *occurs* at an instant and that an instant *occupies* a point.¹

It is the *point-instant* complex which guarantees for the universe a structure and a motion. It is also the assertion that the bond between time and space is ultimately unbreakable. The theory of relativity of Minkowski and Einstein saw reality as four-dimensional: to the three dimensions of space was *added* a fourth dimension of time. In fact, this was to turn time into another kind of space and to demolish its significance as well as to rob it of its independence. Alexander takes another view. Time is not for him simply the neglected dimension of a reality largely spatial. To the three dimensions of Space he marries the *three elements of Time* which are, irreversibility, successiveness, and its transitiveness or 'betweenness'. In other words, in restoring Time to the independence of a great principle, he argues that it can be broken down into elements as independent of each other, and as basic, as the dimensions of space.

The relationship of Space and Time is to be explained therefore as the dovetailing of two fundamental creative principles, rather than the correction of customary measurement by the addition of a new dimension. 'Time does with its one-dimensional order cover and embrace the three dimensions of Space, and is not additional to them. To use a violent phrase, it is, spatially, not temporally, voluminous.'² The theory of relativity, as we saw, tends to speak of *matter* as the determinant of space. For Alexander, it is the other way round. 'Whatever substance there is must be a fragment of the one stuff of Space-Time.'³ 'It is clear that Space-Time takes for us the place of what is called the Absolute in idealistic systems. It is an experiential absolute. All finites being complexes of space-time are incomplete. They are not the sum of reality. But their absorption into the one does not destroy their relative reality. That could only happen if the real in which they are absorbed were of different stuff from themselves.'⁴

How, in this Space-Time world does change, or rather growth, take place? It is by the motion of Time within Space. New space is not created as Time moves, but there is a 'continuous redistribution of instants of Time among points of Space'. Alexander wrote often

¹ *Ibid.*, p. 48.

² *Ibid.*, p. 59.

³ *Ibid.*, p. 60.

⁴ *Ibid.*, p. 346.

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of the peculiar nature of artistic creation in man: indeed, his thought and writing are saturated with aesthetic feeling. He urged that 'the essence of the work of art is that in it creative mind and material are indissolubly fused'. And this, he said, is typical of the universe as a whole—the fusion of something which corresponds to mind with something which corresponds to material. But he does not accept the notion of an independent Creator at work on independent material. Rather like Herbert Spencer he asserts that in virtue of an inner principle of restlessness the universe itself breaks up into parts which, though still held in the mesh of space-time, are compelled by inner necessity to further acts of creation. The movement of Time through Space is a creative one. Let us put this difficult conception into his own words:

'As the work of art is the fusion of spirit and matter in finite ingredients, so within this space-time, which is below fusion, there is an element which corresponds to spirit and one which corresponds to matter, and these are respectively time and space. Time is, as it were, the mind to which the body is space. Or since we are helping ourselves out to describe the simple by the complex . . . let us rather say that in spirit and body as we know them, whether in an organism or in the new creation by man which art supplies, spirit is the time, and body or material the space element in these highly developed creations of the world process. Our life is the time of our body, which is the space of our life. . . .'¹

Only if the creative role of Time, exercised, made real, through space, is understood does 'emergence' make sense:

'Within the all-embracing stuff of Space-Time, the universe exhibits an emergence in Time of successive levels of finite existences, each with its characteristic empirical quality. The highest of these empirical qualities known to us is mind or consciousness. Deity is the next higher empirical quality to the highest we know, and at any level of existence there is a next higher empirical quality which stands towards the lower quality as deity stands towards the mind.'²

And there really is an emergence of new things or qualities in Time. Consciousness, for example, is something more than mere

¹ 'Artistic Creation and Cosmic Creation' in *Philosophical and Literary Pieces*, London, 1939, p. 272.

² *Space, Time, and Deity*, p. 345.

neural organization. Indeed, mere neural organization does not produce consciousness: when consciousness comes, a special neural organization is called into existence to deal with it, and is apparently useless for the lower neural purposes. It is in this emergence of the new that Alexander discovers Deity. But he makes a distinction between God and Deity. God is the object of the religious emotion, or worship. But man may be deceived, or self-deceiving. If therefore we want to know what is God, in an empirical sense, we have to ask how He is experienced objectively. The subjective experience is useless. Objectively we experience Him as Deity, Alexander maintains: the universe is organized hierarchically, and to the level or order of inorganic matter, *life*, the hierarchy standing next above it, is as incomprehensible as God is to us. Indeed, at the moment when *life* begins to emerge to stand above matter, *life* is Deity, for Deity is the next highest level. To living things, therefore, *mind* is Deity, but above *mind*, what is there? Alexander believes that, standing above us, there may be *angels*, beings who can comprehend us, but whom we cannot comprehend:

'It was legitimate for us to follow up the series of empirical qualities and imagine finite beings which we called angels, who would enjoy their own angelic being but would contemplate minds as minds themselves cannot do, in the same way as mind contemplates life and lower levels of existence. . . . This device was adopted half playfully. . . . But now we can see that it is a serious conception. For the angelic quality the possession of which enables such beings to contemplate minds is this next higher empirical quality of deity and our supposed angels are finite beings with this quality.'¹

It is difficult, on Alexander's hypothesis, not to regard Time as God. But Alexander argues that bare Time needs to be completed by the hypothesis of Deity or God. Bare Time, the soul of its space, becomes in course of time so complicated and refined that the finite beings we know arise. These finite beings are pulled towards the future, towards that which has not yet emerged. It is this pull towards them of the future, of the unrealized, which is in a sense, God. But unlike the Absolute, or the Christian Trinity, which exist from eternity to eternity, and transcend the world experienced in time, Alexander's God must exist in time. God is

¹ Ibid., p. 346.

Time's expression: 'For us deity is like all other empirical qualities a birth of Time and exists in Time, and timelessness is for us a non-entity, and merely a device for contrasting God's infinite deity with the relative imperfection of the finite things we know.'¹

If Time, Alexander argues, is the very substance of reality, then how can there be a Being who has Himself exhausted the future, and for whom existence is already completed, though 'timeful creatures' may still be elaborating it in their own way? No, God, too, is the creature of time. 'God is not the already perfect being who for the benefit of imperfect man takes human shape, but is himself in the making, and his divine quality or deity a stage in time beyond quality. And as the root and leaves and sap of the plant feed its flowers, so the whole world, as so far unrolled in the process of time, flowers into deity. Matter and spirit, stones, trees, and men gather into and sustain that quality of the world. The values, truth, goodness, beauty, are not themselves divine or witnesses to divinity, but are the basis on which it is erected, or the seed from which it springs. As our human existence with its prerogatives is nurtured by everything beneath it, for we are part of nature, so God's deity is nurtured by all that it transcends. And since this nutriment of deity is infinite, being the whole world, God's distinctive deity is infinite, since it is the expression and consummation and representative of all that conspires to its production. God's deity is thus the new quality of the universe which emerges in its forward movement in time.'²

No more eloquent doctrine of emergent evolution has ever been preached than this: there is a breath-taking sublimity about Alexander's system which extorts our admiration. But admirable, poetic, mystical, exciting as it is, it just will not do. For the God which emerges as the crown of this system is the mere creature and captive of time. There is no need for Him. It is no compensation for the loss of His supremacy that Alexander awards Him the consolation prize of a conditional infinity.

It is one of those ironies in which the historian must rejoice that at the period when G. E. Moore and his many followers were compelling recognition of a real objective world, the scientists were

¹ *Ibid.*, p. 347.

² 'Theism and Pantheism' in *Philosophical and Literary Pieces*, p. 330.

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busy emptying it of all solid content. Had not science accomplished this revolution then we might have seen a return to the point of view of Locke, that there were real substances with primary and secondary qualities, of which the secondary were conceivably subjective. But just as the new realism gained ground and it became possible to accept that the subject perceived something which was not simply the content of its mind, it also became impossible even to imagine what the external object might consist of: certainly nothing substantial in the Newtonian sense. The philosopher who grappled with this situation and so triumphantly exploited the doubts and uncertainties about the ultimate nature of matter as to convert them into metaphysical principles, was Alfred North Whitehead. He produced a philosophic system which, in the pages of *Process and Reality* emerges as more profound and mysterious than anything else in contemporary metaphysics.

Whitehead was born in 1861 at Ramsgate in Kent: he came of Kentish yeoman stock, and his father was an Anglican parson. Whitehead has left us some endearing personal recollections of his family and his boyhood in his 'Autobiographical Notes'.¹ At fourteen he went to Sherborne School, in Dorset, a public school which dated from St. Aldhelm and claimed Alfred the Great as a pupil. The school was the old monastery building and the study young Whitehead occupied in his last two years was reputed once the Abbot's cell. The Abbey bells had been brought from the Field of the Cloth of Gold by Henry VIII: beneath the Abbey roof lay the bodies of Saxon princes. Whitehead's education was strictly classical: Greek and Latin were construed every day. The new Testament was read in Greek and Whitehead records that the difficulty of what therefore to do about the Old Testament was solved by reading the Septuagint in class on Sunday afternoons. In these lessons philology sometimes became more important than religious content. 'I remember the headmaster stopping a boy who, when translating into English before the assembled class, reeled off the familiar phrase, "Alas, alas, the glory of Israel hath departed." with "No, no, laddie: The glory of Israel has gone away as a colonist".'²

¹ *Essays in Science and Philosophy*, London, 1948, p. 7 *et seq.*

² *Ibid.*, p. 31.

These deep roots struck into England's past do so much to explain the man who was subsequently, as Professor of Philosophy at Harvard, to tell his students that the Harvard School of Politics and Government, as a training 'in political imagination', could not hold a candle to the 'old-fashioned English classical education of half a century ago'.

Whitehead went to that nursery of philosophers, Trinity College, Cambridge, in 1880, and continued in residence until 1910, having gained a Fellowship in 1885—at which time, he tells us, he knew long stretches of Kant's *Critique of Pure Reason* by heart. He was one of the famous group of 'Apostles' which met on Saturdays and talked through the night and of which Sorley, Henry Head, Lowes Dickinson, and Maynard Keynes were other famous members. In 1910 Whitehead joined the staff of London University and subsequently became Professor of Applied Mathematics at the Imperial College, South Kensington. His philosophical life began late, at the age of sixty-three, when he became Professor of Philosophy at Harvard. That was in 1924 and his philosophical interests then were barely more than six years old. To the period of Whitehead's residence in Cambridge belongs the famous collaboration with Bertrand Russell. Whitehead had produced his first book, *Treatise on Universal Algebra* in 1898 and Russell his *Principles of Mathematics*, also a first volume, in 1903. The two men were friends, for Russell had been first the pupil, then the colleague of Whitehead at Cambridge. The intimacy of the two finest mathematical brains of the century gave birth to that monumental joint work *Principia Mathematica*. The collaboration to produce it lasted eight or nine years: but 'our fundamental points of view—philosophical and sociological—diverged, and so with different interests our collaboration came to a natural end'.¹ And this despite the fact that Whitehead supported Russell's radicalism, became an advocate (like him) of the emancipation of women and used his influence in the University on behalf of equality of status, and enrolled himself politically first with the Liberals and then with moderate Labour. He was a pioneer along the path which many hundreds of gifted and privileged young men were to hammer into a broad highway—the path that led such young men to lend their support to the equalitarian

¹ *Ibid.*, pp. 12-13.

socialist policies of the Labour Movement and to serve it as its ideological general staff.

In his Cambridge days, Whitehead's interests were principally scientific, and mathematics was for him the instrument by which verity was to be reached. In that interesting primer he wrote for the Home University Library, *Introduction to Mathematics* (1911) he is found claiming, in language utterly limpid, that the 'progress of science consists in observing' the interconnections of all events 'and in showing with a patient ingenuity that the events of this ever-shifting world are but examples of a few general connections or relations called laws. To see what is general in what is particular and what is permanent in what is transitory is the aim of scientific thought.'¹ And as science moves towards perfection, so it will become increasingly mathematical in its ideas and form.

What a change is there when we come to *Process and Reality* (1929)! It is characteristic of the book that we find him plunged—among other difficult tasks—into an effort to classify 'actual entities' in respect of their 'satisfactions' which in their turn can be classified 'by reference to "triviality", "vagueness", "narrowness", "width".' What these qualities are is explained: triviality is due to the wrong sort of width. 'A high category involves unplumbed potentiality for the realization of depth in its lower components. Thus "triviality" arises from excess of incompatible differentiation.'² The mathematician here stands in the way of the metaphysician: but it would be tedious to quote more of language which often reads like James Thurber's idea of the language all philosophers talk. One need only remark that he must have had some prevision of the fate which awaited him when he wrote 'It is a safe rule to apply that, when a mathematical or philosophical author writes with a misty profundity, he is talking nonsense'.³

The protest concerning language and terms has to be made. It is often impossible to grasp the imaginative reality which genuinely pervades Whitehead's 'occasions', 'satisfactions', 'prehensions', and so forth, even by the aid of Dorothy Emmet's *Whitehead's Philosophy of Organism* (1932). The obscurity and coldness into which

¹ Op. cit., pp. 13-14.

² *Process and Reality*, p. 170.

³ *Introduction to Mathematics*, p. 227.

this terminology plunges what is in fact a philosophy of warmth and tenderness deserving the lucidity of a Santayana must not blind us to the extraordinary contribution which Whitehead has made. It is nothing less than the effort to *re-think and re-phrase* the enigma of being in the light of contemporary science. The result of this effort is so important that it would be a tragedy if it were to be lost while more superficial philosophies survived. In exegesis of his own work Whitehead wrote: 'Almost all of *Process and Reality* can be read as an attempt to analyse perishing on the same level as Aristotle's analysis of becoming. The notion of the prehension of the past means that the past is an element which perishes and thereby remains an element in the state beyond, and thus is objectified. That is the whole notion. If you get a general notion of what is meant by perishing, you will have accomplished an apprehension of what you mean by memory and causality, what you mean when you feel that what we are is of infinite importance, because as we perish we are immortal. That is one key thought around which the whole development of *Process and Reality* is woven, and in many ways I find I am in complete agreement with Bradley.'¹

It is useful then to begin with the notion of perishing, for this notion is foreign to the old conception of matter which in the Cartesian or Newtonian sense was an enduring, fundamentally unchanging substance to which accidentals attached themselves. It is also foreign to the general notion of the person, or of consciousness where once more what is postulated is a quasi-permanent being, fundamentally unchanged despite its experiences. But if these notions are false ones, what is to replace them? Not only new propositions but, significantly, new *terms*. Bradley, Whitehead explains, 'gets into a great muddle' because he accepts a language 'based upon entirely alien concepts' and so throws what is valuable and new in his thought into confusion.

We have therefore to begin with such explanations as Whitehead makes of *being* in his simpler works, such as *Nature and Life* (1934). There, for example, he explained that though the Newtonian concept of a material body as consisting essentially of mass, motion and shape was enormously successful, and scientifically invaluable, it left the *activity* of matter inexplicable. What was the force of gravity

¹ *Essays*, p. 89.

exercised across space by one inert body on another? This gravity was fundamental to Newtonian physics, too, yet it remained incomprehensible. 'Mass and stress' were left 'in the position of detached facts devoid of any reason for their compresence'. Newton thus illustrated the philosophic truth that a dead Nature can give no reasons for its activities. 'A dead Nature aims at nothing.' It is without meaning, which resides in values. What Newton did to make matter unintelligible, Hume did for the perceiving subject. For, through Hume, we reach the position in which the field of perception is 'devoid of any data for its own interpretation'. We can give no reasons for what we see, or what we believe about what we see. Fancy, habit, chance, these veil the mysteries of perception, causation and reason as surely as the origin or nature of gravitation is occluded in Newtonian physics. Yet—there is perhaps a personal note here—'the Hume-Newton situation is the primary presupposition for all modern philosophic thought. Any endeavour to go behind it is, in philosophic discussion, almost angrily rejected as unintelligible.'¹

Contemporary physics has produced an entirely new conception of matter. Matter is energy, and energy is sheer activity. In essence the atomic structure is a vortex of activity. It does not consist of the old particles of physics. It has form and motion, but no mass in the accepted sense of the word. The concept of simple location has also to be abandoned. The old view of small units of matter occupying distinct locations of space and united by mysterious relations now appears untenable. If anything matter consists of 'vibratory differentiations of space-time. Any local agitation shakes the whole universe. The distant effects are minute, but they are there.'² The Aristotelian notion of a procession of forms through time has now to be abandoned for 'the forms of process'. If entities are ultimately substantial, isolated, unchangeable things what need have they of relations between them? If they are *not*, relations leap in significance. The new philosophy therefore has to be a philosophy of relativity. The nature of process, the forms into which it casts itself, and the relationships between the several parts of the total process, these are the fields to be explored.

¹ *Nature and Life*, Cambridge, 1934, p. 25.

² *Ibid.*, p. 30.

The drift of Whitehead's thought is made clear by his analysis in *Process and Reality* of the arguments made by English empiricists concerning the nature and significance of perception. The manner in which Whitehead dissects the metaphysics of Locke and Hume and so derives support for his own philosophy commends admiration. His argument is that if one insists on the absolutely discrete observer, enjoying his perceptions, one is driven to one of several conclusions: first the solipsistic one that all reality is perception; second, that really independent objects signal to us and we catch their signals but know nothing else about the reality which does the signalling (which is phenomenism), or, third, the complete scepticism of Hume.

There is no entry here except into sterile debate: along this traditional way the road is blocked. The problem has to be rephrased thus: 'The perceptive constitution of the actual entity presents the problem, How can the other actual entities, each with its own formal existence, also enter objectively into the perceptive constitution of the actual entity in question?' Assuming the falsity of the solipsistic argument, which universal experience denies, how does one entity enter into the being of another? How does the view of the park from my window enter into me? The problem is not first *what do I perceive*, but *what is perception?* 'This is the problem of the solidarity of the universe. The classical doctrines of universals and particulars, of subject and predicate, of individual substances not present in other individual substances, of the externality of relations, alike render this problem incapable of solution.'¹

The routine perceptual approach proving therefore useless to the unveiling of reality, it remains to find another one. But what? Whitehead seeks to go behind sense-impressions, and behind Newtonian physics. He argues that it does not follow at all that what is logically simple comes first in experience: for example it is logically convenient for Locke to argue that all experience is built up out of simple sensations or *ideas*. But is what he regards as logically primary, primary also in reality? It does not follow that experience is derived from consciousness, which is what in fact he takes for granted. On the contrary, Whitehead argues, 'consciousness presupposes experience, and not experience consciousness'. Is there

¹ *Process and Reality*, pp. 88-89.

not an aboriginal feeling which is prior to all perceived sensation? This is a view which the theory of evolution must uphold and it is demonstrated by the behaviour of simple organisms destitute of specialized sense-organs. If this is true then perception is nothing but a refinement of this more primitive and generalized feeling. Whitehead finds this point of view confirmed by Santayana's doctrine of *animal faith*. If we do possess, as Santayana teaches, a direct idea or immediate feeling for other real objects, then perhaps we are in the presence of 'a kind of perception which has been neglected by the philosophic tradition'.

In ourselves we can discover experiences which do not appear to derive from perception as normally understood: 'An inhibition of familiar sensa is very apt to leave us a prey to vague terrors respecting a circumambient world of causal operations. In the dark there are vague presences, doubtfully feared; in the silence, the irresistible causal efficacy of nature presses itself upon us; in the vagueness of the low hum of insects in an August woodland, the inflow into ourselves of feelings from enveloping nature overwhelms us; in the dim consciousness of half-sleep, the presentations of sense fade away, and we are left with the vague feeling of influences from vague things around us. It is quite untrue that the feelings of various types of influences are dependent upon the familiarity of well-marked sensa in immediate presentment.'¹

This primordial *feeling* is of the very nature of things. The universe is a *feeling* universe: feeling is as true as between matter and matter as between life and life. In *Science and the Modern World*² Whitehead quotes approvingly this passage from Bacon's *Sylva Sylvarum* in which the physical reaction of one body to another is likened to perception. As this is a key to Whitehead's theory of *prehension*, I quote it in full:

'It is certain that all bodies whatsoever, though they have no sense, yet they have perception: for when one body is applied to another, there is a kind of election to embrace that which is agreeable, and to exclude or expel that which is ingrate; and whether the body be alterant or altered, evermore a perception precedeth operation; for else all bodies would be alike to one another. And sometimes this perception, in some kind of bodies, is far more subtile

¹ *Ibid.*, p. 267.

² Cambridge, 1928 edn., p. 52.

than sense; so that sense is but a dull thing in comparison of it: we see a weatherglass will find the least difference of the weather in heat or cold, when we find it not. And this perception is sometimes at a distance, as well as upon the touch: as when a loadstone draweth iron; or flame naptha of Babylon, a great distance off. It is therefore a subject of very noble enquiry, to enquire of the more subtle perceptions; for it is another key to open nature, as well as the sense; and sometimes better. And besides, it is a principal means of natural divination; for that which in these perceptions appeareth early, in the great effects cometh long after.'

We are thus brought to a universe in which feeling is at least *one* of the primary realities, and human *perception* merely a special form of it. 'There is nothing in the real world which is merely an inert fact. Every reality is there for feeling: it promotes feeling; and it is felt. Also there is nothing which belongs to the privacy of feeling of one individual actuality. All origination is private. But what has been thus originated, publicly pervades the world.'¹ But feeling is normally considered to be the distinctive attribute of life, and a feeling universe therefore predicates an organic universe. Hence, in fact, the philosophy of *organism*. The universe presents us with structured societies of various types: one may think of a molecule, a crystal, a polyp, a man. 'It is obvious that a structured society may have more or less "life", and that there is no absolute gap between "living" and "non-living" societies.'² Life, in Whitehead's definition, is novelty, 'the origination of conceptual novelty—novelty of appetition'. And appetition is more or less what it implies, feeling not simply *about* something, but *for* something, even for something that not yet is.

The feeling for things is a kind of *prehension*, a reaching out and gripping of other things, or bringing them into the experience of the subject. It is the entry of one entity into the being of another entity: it is therefore a two-way process, one side of it public and the other private. But the experience of prehension, of the relevance of one kind of thing to the being of another, and the irrelevance, or negative relevance of another, means that choice becomes possible. There can be acceptance or rejection of feeling: and so in the determination of what shall enter into the given entity there is

¹ *Process and Reality*, p. 472.

² *Ibid.*, p. 156.

freedom. There is freedom about the future too. *Appetition* is the expression of that freedom, of that movement towards certain ends or experiences. At least, this is how I understand the use of the term, and Whitehead's own words are 'feeling, and reference to an exterior world pass into appetition, which is the feeling of determinate relevance to a world about to be'.¹

However, I am to some extent jumping ahead. For Whitehead cannot be understood without a grasp of how one entity enters into the experience of another in the sense in which experience is the *being* of that other. We have to remind ourselves that Whitehead is seeking all the time to get behind Newtonian *substance* and empiricist *perception*. Instead of substance, whether mental or material, we are compelled to visualize 'percipient occasions' not so very different from the *events* which are the foundations of Bertrand Russell's theory of being. Each *percipient occasion* is 'its own standard of actuality. If in its knowledge other actual entities appear, it can only be because they conform to its own standard of actuality.' One might picture such a centre of activity as the atom in empty space, but one has to endow it with the feeling of an organic cell. That atomic structure prehends others; is prehended by them, it radiates energy and receives it, it unites with other atoms and shares their electrons. It lives in a world of multiple entities all of which can influence it in some degree, and in fact do so, and in such measure enter into its being. In a sense, its relations are its prehensions, or the fact of its being prehended.

But Whitehead uses *actual entities* and *actual occasions* to mean the same thing. The occasion then is an entity, an actual one: a real being in the non-substantial sense in which Whitehead implies it. But one has to abandon the notion of simple location in connection with it, or else one is condemned to import the rejected concept of substance. The actual entity has simple location only in the sense that it is a point of intersection at which many influences meet and from which influences radiate. This point is—to introduce a new term—its *concrescence*. These actual entities unite to form structured societies, and the difference between the lower and higher structures is to be found in the degree of complexity and of centralization. 'The living body is a co-ordination of high-grade

¹ *Ibid.*, p. 247.

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actual occasions; but in a living body of a low type the occasions are much nearer to a democracy. In a living body of a high type there are grades of occasions so co-ordinated by their paths of inheritance through the body, that a peculiar richness is enjoyed by various occasions in some parts of the body'—such as what we are accustomed to call the mind or the soul. Indeed character begins when we discover that there is a presiding occasion, or dominant entity, 'the final node, or intersection, of a complex structure of many enduring objects'.¹ We discover in fact behind this difficult terminology what Whitehead describes as a cellular universe in which the conscious, the living and the non-living subtly grade into each other. 'The philosophy of organism is a cell-theory of actuality. Each ultimate unit of fact is a cell-complex, not analysable into components with equivalent completeness of actuality.'² The cells in a body, though certainly distinct entities, are in relations of the utmost complexity with each other: by fibres, chemical secretions, radiations of heat and energy and by hardly perceptible pulsations they exert their mutual influence far and wide through the cell-colony in which they live. In the same way the beings which Whitehead calls *actual entities* or *occasions* exist not only in themselves, but permeate the whole of reality, exercising more force or influence upon that to which they are akin than upon that to which they are not.

If we are able to think of the universe as one of multiple entities, or points of concrescence bound together by thread-like paths of prehension whereby every one is member of another, we come to some kind of visual apprehension of the organic universe. Though this universe is one in its being and becoming, it is not one cell: not only are there distinct entities, but each actual entity is a separate point of definition of the universe, and 'Actual entities are called "contemporary" when neither belongs to the "given" actual world defined by the other'.

The actual entity or occasion is not indeterminate: on the contrary it is completely realized. But it perishes, for actual entities are not enduring substances, they perpetually perish. They pass away: 'In the organic philosophy an actual entity has "perished" when it is complete. The pragmatic use of the actual entity, constituting

¹ Ibid., p. 166.

² Ibid., p. 334.

its static life, lies in the future.' (That is the process of dying subjectively and becoming objective). 'The creature perishes and is immortal. The actual entities beyond it can say, "It is mine". But the possession imposes conformation.'¹

If the actual entities which Whitehead equates with 'sensible objects' perpetually perish, what endures? 'In the philosophy of organism it is not "substance" which is permanent but "form". Forms suffer changing relations; actual entities "perpetually perish" subjectively, but are immortal objectively.'² The actual entity, a kind of point-instant in the perpetual flux, enjoys its moment and is gone. To endure it has to take on form, that is it must enter into a train of such entities or occasions, into some sort of nexus. The perpetual perishing of actual entities is related to space-time. Space and time are not the product of the mind, the pure intuition of Kant, they are on the contrary derived from experience—even from vulgar experience: Whitehead accepts the commonsense view that we derive a notion of space from the discovery of objects in extension, and of time from experience of events in succession. Therefore Newton's absolute time and absolute space are rejected for the relative space-time of Einstein: and each actual entity enjoys its own so to speak quantum of space-time, its own fragment of the extensive continuum. In fact, the fragmentation or atomization of the extensive continuum is the process of realization or creation: what is beyond, what is potential, is undifferentiated continuum. It is the bare possibility in face of every realized thing. But the rejection of Newton's absolute space and time has one curious exception, 'When we further consider how to adjust Newton's other descriptions to the organic theory, the surprising fact emerges that we must identify the atomized quantum of extension correlative to an actual entity, with Newton's absolute place and absolute duration. Newton's proof that motion does not apply to absolute place, which in its nature is immovable, also holds. Thus an actual entity never moves: it is where it is and what it is.'³ An entity is an *occasion*: it occurs, is gone. Motion in place and in time have to be sought in the nexus into which actual occasions are caught. Thus a molecule, or anything indeed which appears to us to have the continuity of an object, is a historic route of occasions. It is the form, the pattern

¹ *Ibid.*, p. 126.

² *Ibid.*, p. 44.

³ *Ibid.*, p. 113.

both in space and time into which occasions fall. It is in this form, that the creativity within the flux is to be discovered; form is a guarantee that despite the multiplicity of the universe, its unity is not to be denied. Form is, in a sense, God. Whitehead has in fact invented a new Absolute, as self-revealing as Hegel's, as self-creative as Bergson's, as evolutionary as Lloyd Morgan's, as atomic as Bertrand Russell's events. But one can proceed no farther without discussing Whitehead's idea of God, for Whitehead was a deeply religious man and, as Rudolf Metz wrote, 'The idea of God is rooted fast in the whole of Whitehead's system, and is no supplementary addition which it could dispense with without serious loss'.¹

There are many remarkable passages in Whitehead's works in which he speaks with reverence and tenderness of the role of God. These I must summarize: God has two natures, a *primordial* nature and a *consequent* one. His *primordial* nature is the ground for the universe as we know it: in fact why it is *this* universe and not another, in view of the limitless creative possibilities. A little thought shows us that potentiality *is* clearly unlimited, but all actuality involves exclusion of alternatives, all definition involves rejection of other possibilities. God therefore is the source of all limitation (and *form* is limitation) just because he is the source of creation. 'God is the ultimate limitation, and His existence is the ultimate irrationality. For no reason can be given for just that limitation which it stands in his nature to impose. God is not concrete, but he is the ground for concrete actuality. No reason can be given for the nature of God, because that nature is the ground of rationality'.²

God's primordial nature is conceptual. God conceives the world. But, in his primordial being, he suffers the deficiency of not being *actual*. 'Thus, when we make a distinction of reason, and consider God in the abstraction of a primordial actuality, we must ascribe to him neither fulness of feeling, nor consciousness. He is the unconditioned actuality of conceptual feeling at the base of things; so that, by reason of this primordial actuality, there is an order in the relevance of eternal objects to the process of creation'.³

¹ *A Hundred Years of British Philosophy*, London, 1938, p. 618.

² *Science and the Modern World*, Cambridge, 1928, pp. 221-2.

³ *Process and Reality*, p. 522.

On the other hand, in His consequent nature, that nature which arises from the realization of His concepts, God judges the world. He is not one productive force battling against another productive force, or one destroyer ranged against another destroyer. Patiently he harmonizes, rationalizes, saves and 'uses what in the temporal world is mere wreckage'. 'He does not create the world, He saves it: or, more accurately, He is the poet of the world, with tender patience leading it by his vision of truth, beauty and goodness.'¹

But God is not to be conceived, because of this mastery of the world, as static. He is the marriage of fluency and permanency. He is the solution of that perpetual perishing which Whitehead sets out to unravel. The world moves on from creation to creation. The perished past is taken up into the future: it is in that sense saved and the whole fluent world is made everlasting by its objective immortality in God. In a series of noble antitheses, Whitehead seeks to express 'the shifts of meaning' about God: shifts which are contrasts rather than oppositions:

'It is as true to say that God is permanent and the World fluent, as that the World is permanent and God is fluent.'

'It is as true to say that God is one and the World many, as that the World is one and God many.'

'It is as true to say that, in comparison with the World, God is actual eminently, as that, in comparison with God, the World is actual eminently.'

'It is as true to say that the World is immanent in God, as that God is immanent in the World.'

'It is as true to say that God transcends the World, as that the World transcends God.'

'It is as true to say that God creates the World, as that the World creates God.'

'God and the World are the contrasted opposites in terms of which Creativity achieves its supreme task of transforming disjoined multiplicity, with its diversities in opposition, into con-crescent unity, with its diversities in contrast.'²

In *Process and Reality* much play is made of the 'eternal objects'. By this Whitehead appears to mean something close to the im-

¹ Ibid., p. 526.

² Ibid., p. 528.

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mortal and unchangeable 'essences' which Santayana distils out of common experience. They are even closer to the eternal forms of Platonic thought. And this brings me to some final words about Whitehead's neo-Platonism. He is, of course, supremely the philosopher of the Heraclitean flux. He conceives of the world as a perpetual perishing, as a constant movement in which the present is destroyed into the past and all things change and dissolve in the unending creative movement towards the future. But why *creative* movement? Why not just movement or change, or even chaos? The movement is creative for Whitehead because it involves the realization of values which emerge from God. There is not simply in the process of change the constantly changing intersection of prehensions: *there is the intersection of the World of Activity by the World of Value*. The eternal values cut across the world of flux. Like groins pushed into the sea they hold and form the shifting sands. Thus meaning and significance are injected into the flux. In a remarkable passage in *Process and Reality* he discusses this in terms of the hymn:

*Abide with me;
Fast falls the eventide.*

And speaks of both of these as expressing man's hunger for enduring value as well as his apprehension of change. Elsewhere the themes of permanence and flux are discussed in terms of a homely analogy:

'Evaluation involves a process of modification: the World of Activity is modified by the World of Value. It receives pleasure or disgust from the Evaluations. It receives acceptance or rejection: It receives its perspective of the past, and it receives its purpose for the future. This interconnection of the two Worlds is Evaluation, and it is an activity of modification.'

'But Evaluation always presupposes abstraction from the sheer immediacy of fact: It involves reference to Valuation.'

'If you are enjoying a meal, and are conscious of the pleasure derived from apple-tart, it is the sort of taste that you enjoy. Of course the tart has to come at the right time. But it is not the moment of clock-time which gives importance; it is the sequence of types of value—for instance, the antecedent nature of the meal, and your

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initial hunger. Thus you can only express what the meal means to you, in terms of timeless valuations.¹

Samuel Alexander surrendered God to Time—God became for him the creature of Time. Whitehead, despite his Platonism, surrenders God (or so it seems to me) to a superior process called Creativity. The effort made by Whitehead to reconcile the antinomies of European philosophy, and to bring God and science, change and eternity under one roof is a heroic one. Nevertheless one cannot help suspecting that this is the sort of philosophy which would have been invented by an atom or a body cell, if one of sufficient genius had arisen, for despite Whitehead's declaration that he speaks of a flesh and blood world, it is a philosophy into which historical man is in some sense an intrusion. Certainly man is more difficult to discover than God or cell in Whitehead's nexus of actual occasions or actual entities.

¹ 'Immortality' in *Essays*, p. 63.

CHAPTER SIXTEEN

The Sacramental Philosophy

JOHN HENRY NEWMAN (1801-1890)

FREDERICK DENISON MAURICE (1805-1872)

WILLIAM TEMPLE, ARCHBISHOP OF CANTERBURY
(1881-1944)

That the main current of English philosophy is empiricist is, I think, indisputable. But never far below the surface there has always been found flowing a strong current of Christian speculation seeking to relate the discoveries of science to Christian teaching about God and man. Sometimes it has issued in a school: the Cambridge Platonists is the most important instance of this. At other times a Christian feeling has illuminated a whole school which has not otherwise rested upon Christian speculation. The high moral and religious tone of Idealism, especially that of Green and Caird, made it difficult for a thoughtful divine of the day, more familiar with his Plato than his Hegel, not to become, in terms of philosophy, an Idealist too. The two currents subtly merged.

Occasionally, there have emerged Christian thinkers whose influence was paramount. Such was John Henry Newman (1801-1890) who abandoned the Church of England for the Church of Rome and became a cardinal. He was perhaps the outstanding philosopher-divine of the last century. He was also a brilliant and persuasive apologist for Roman Catholicism. To a nation with the strong non-conformist temper of his day, Rome was still 'the scarlet woman': there understanding stopped. Newman did more than any other man to reveal her ancient genius in worship and to restore her intellectual prestige. Philosophically he was far from

being a Thomist and were he alive would reject the neo-Thomism of Jacques Maritain and his followers. He was nearer to the English scholastics, in fact. His works are voluminous but his philosophical teachings found their clearest expression in *An Essay on the Development of Christian Doctrine* (1845), *Apologia Pro Vita Sua* (1864) and *An Essay in aid of a Grammar of Assent* (1870). His most important contribution was the distinction he made between 'real' and 'conceptual' apprehension or consent. It was clear, he argued, that our response to the facts given to our apprehension varied in strength and certainty according to their source. We respond more readily to that which is presented to us as real and immediate, than we do to that which is presented to us as formal and conceptual, like abstract ideas or geometrical symbols. The response to that which our whole being apprehends as real is far more complete than to the verities of mathematics. Newman laid special importance upon the *intuitive* grasp of reality: it bears resemblance to Hume's theory of the imagination on the one hand and to Santayana's animal faith on the other. What is true for the act of knowing is also true of the act of assent, or faith. Here Newman surprisingly anticipated the contemporary existentialist position by teaching that *assent* is a total reaction of the whole being, beyond further analysis, and not an estimate of probabilities at an intellectual level. The subjective nature of the act of assent is shown in such passages as this: 'what is proof for one understanding is none for another, and the certainty of a proposition consists really in the certainty of the mind that considers it.' Or again: 'There is no final criterion of truth apart from the witness with which the mind itself confronts truth.' This is not to be understood, or misunderstood, as evasion of the objectified knowledge of science for there is not to be ranged on one side objective or scientific proof and on the other subjective assent. The manner in which science arrives at its findings may be equally 'illative'. The 'illative sense' is Newman's special term for this total response of the whole man to truth.

It is most interesting to find that Newman traces his philosophy back to Berkeley and Bishop Butler. True, he had not studied Berkeley, but he had grasped that Berkeley's immaterialism meant that all percipient experiences must rank as signs and intimations of the will and presence of God. But he had read Bishop Butler's

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Analogy of Religion (1736), a powerful Anglican reply to polite eighteenth-century deism, and it was from the *Analogy* (as he confessed in his *Apologia*) that he gathered the sacramental doctrine, of which William Temple was to make such use in our century, 'that material phenomena are both the types and the instruments of real things unseen'.

Newman is a figure apart. But there have been divines who have played a role both in the intellectual and social fields. Such for example was Frederick Denison Maurice (1805-72) who was removed from the Chair of Divinity at King's College, London, in 1853 for his heretical tendencies but subsequently became Professor of Moral Philosophy at Cambridge. His *Moral and Metaphysical Philosophy*, published at the time of his death, reveals the influence of Coleridge: it is a work of great learning—nothing less than a history of Western thought from the fourteenth century. It carried the prophecy that a civilization which lost its grasp of the Infinite and Eternal was doomed, and would seek to save itself by the aid of an artificial religion. His most memorable labours lay in the social field. He was the founder of the Christian Socialists, that energetic group of Anglican parsons of the stamp of Charles Kingsley, and reformers like Thomas Hughes and Vansittart Neale. Maurice drew after him a whole generation of Christian socialists and co-operators and changed the temper of the Church of England in social matters for good.

The man on whom in this century his mantle fell was William Temple, the most remarkable philosopher-divine whom the Church of England has produced for many centuries. Temple's work is as important in philosophy and theology as that of Newman, and as full-blooded in the social field as the Christian Socialism of Maurice. William Temple was born in 1881: the second son of Frederick Temple, Archbishop of Canterbury. From 1904-10 he was Fellow and Lecturer in Philosophy at Queen's College, Oxford: thereafter he was headmaster of Repton until 1914 when he resigned to take charge of the living of St. James's, Piccadilly, and to plunge into Church politics. His courage and leadership transformed the Church. It was under his inspiration, at the end of the First World War, that the 'Life and Liberty' movement was launched which awoke the Church to the realities of a suffering world and the gap

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which had grown up between the hopes and fears of common people and the conventional teaching of the Church. It was the energy of this movement which resulted in the restoration of a large measure of autonomy to the Church and in the establishment of the Church Assembly. Temple's vigour raised up a series of conferences, organizations and documents all of which effectively roused the Christian conscience on social and economic questions. The principle he hammered into the Church was that economic questions had to become subject once again to moral laws. He was Labour in his political sympathies. If Britain is now a welfare state enjoying with the approval and support of the Church a large measure of social-democracy, much of the responsibility for that situation rests with the campaigning of William Temple. He was made Bishop of Manchester in 1921, Archbishop of York in 1929, and Archbishop of Canterbury in 1942. He died in 1944, victim of his own prodigious overwork. When one bears in mind the committee-haunted life he led over many of the most troubled years of British history his works of learning are surprising in their scope and scholarship. Something of his philosophical evolution is shown by the titles of his principal works: *The Faith and Modern Thought* (1910), *The Nature of Personality* (1911), *Plato and Christianity* (1916), *Mens Creatrix* (1917) and its sequel *Christus Veritas* (1924), *Nature, Man and God* (1934)—Gifford Lectures—and *Readings in St. John's Gospel* (1939-40). Temple studied under the famous Edward Caird and has many times acknowledged his debt to him, and *Nature, Man and God* is dedicated to him. He was also influenced by the Platonic Christianity of Dean Inge. One may label him both Platonist and Idealist. When Temple was lecturing at Oxford in the decade before the First World War, an Oxford dominated by the great Idealists still, it seemed to him that the working out of a Christian-idealistic philosophy was his central task. And the books which followed those fruitful years witness to this ambition. In *Christus Veritas* man's uniqueness is held to reside in the fact that in him 'the Sense of Value seems first to become distinct' and Value speaks of the nature of God. Reality, Temple there argues, is of distinguishable grades of hierarchies in which the lower depend upon the higher, and all upon the Principle of Will 'but a Will which is thus the origin of the Universe is plainly the Creator, i.e. God'.

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Nature, Man and God, his principal work, on which his reputation must rest, springs rather from Whitehead than Plato or Bosanquet. For it seeks to reconcile the philosophy of process and organism with the Christian Idealism of his earlier standpoint. In the thirties, when these lectures were delivered, Idealism had suffered a decline and fall and only two great philosophies held the field: the sceptical and unsystematic thought of Bertrand Russell, and Whitehead's philosophy of organism. Among the generality of men realism had given way to materialism and to betray an interest in the Absolute or in the Personal God was to write oneself down as *passé* or *démodé*. Temple's work bears traces of the contemporary philosophical and political debates, for he was acutely aware of what his fellow-countrymen were thinking and feeling, but since the world of the thirties does not differ so much from the present one, this contemporary feeling adds to one's pleasure in reading *Nature, Man and God*. And it is readable, original and thoughtful.

It begins seriously with a refutation of the Cartesian *fauxe pas*. Descartes' hibernation in a stove was a disaster for European speculation, for it marked the beginning of the great disjunction between thought and material reality. Temple finds the cause of the disjunction in the collapse of medieval authority and the need to find a new foundation for man's spiritual life. 'If the individual could not find it in the whole scheme of things in which he was placed, he must find it in his own integrity.'¹ Temple links the 'Cogito ergo sum' with Luther's 'Hier steh' ich, ich kann nicht anders'—both for him were typical protestant assertions of the independence of the subjectivity. The logical consistency of Descartes' *Cogito*, he argues, is more apparent than real, for it would be possible for him to make his assertion even if he were only a figure in someone else's imagination. If it were suggested that 'he and I are both of us figures in the dream of a Demiurge, as Tweedledum suggested that Alice and Tweedledee and he himself were all figures in the Red King's dream, there is no way of refuting such a suggestion. If the Red King suggested that Alice was sure of her own existence she would be sure of it; but that would not prevent her going out like a candle when the Red King woke up. She would indeed never know that she did not exist, for so long as she knew anything she would have

¹ Op. cit., p. 66.

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all the existence possible for her—that of a figure in a dream. Whatever she knew, she would know because the Red King dreamt her as knowing it. Now I do not *feel* as if I were only a figure in someone else's dream; but neither do I *feel* as if I had more grounds for the assurance of my own existence than for the assurance of the existence of other things: these assurances arise together. . . .¹

Inadequate though the argument is, it illustrates Temple's analysis of the relation of consciousness to the rest of reality. Abandoned is the idealist argument of the priority of the consciousness, or the empiricist argument that *esse* is *percipi*. It is an error to suppose that in knowledge 'the mind begins with itself and proceeds to the apprehension of the external world by way of construction and inference'. Temple adopts the developmental view of Whitehead, that experience does not arise from consciousness, but consciousness from experience. Feeling and affection precede thought, and thought is called into existence by the need of the organism to adapt itself to the environment in which it discovers itself. Temple joins Whitehead in attacking the empiricist simplification which assumed that units like ideas or impressions or sensations, which the mind collects, are used like bricks to construct a unity, a total picture of reality. He held the opposite to be true—that the mind is confronted with a given whole of experience, which must then be dissected. 'We build up the fabric of our knowledge by taking to pieces the datum of experience.' Feeling is a quality of our consciousness long before knowledge and the necessary pre-condition for the emergence of knowledge. And as knowledge is an emergent from experience, so mind itself is an emergent quality in the universe. *It is an emergent universe*: first matter, then organism, then mind or consciousness.

Temple's process-philosophy is in this sense more materialist than empiricism or even realism. He lists six findings² which I may summarize as follows: 1. Process is real and fundamental: 2. Mind arises as one of its episodes: 3. But as an episode of special quality, for mind can survey the process of which it is part: 4. Mind sees process as an organic unity in which the future of the unity is also a factor determining the nature of past and present: 5. Mind

¹ *Ibid.*, p. 65.

² *Ibid.*, p. 212.

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achieves such independence that 'process falls within its grasp, not it within that of process': 6. The value of past events is *not* unalterable, for the final result of process may alter or transform their status within the whole pattern, as for example, within music or a book, the pattern is not finally exposed until the work is completed, and the completion alone determines the real meaning and relation of all the previous episodes. In this sense, past, present and future are all undergoing transformation. 'The future does not merely disclose in the past something which was always there, but causes the past, while retaining its own nature, actually to be in its organic union with its consequences, something which in isolation it neither is nor was.'¹ This final view has significance for Temple as demonstrating that the will of God may yet accomplish a final reconciliation in which all things are made fair and whole in ways now beyond our imagining.

Where Temple parts company with mechanical and Darwinian materialism is in the role he assigns first to *mind*, and then to *value*. Mind is, if emergent, if called into existence by the needs of the organism to adjust itself to its environment, a necessary part of the material totality. But since the world is an emergent world, which can only mean that new qualities arise not analysable into what preceded them, then the mind is not 'just an arrangement of matter'. It is not epiphenomenal. And, in any case, we are entitled to ask, what sort of a totality is it which includes the phenomenon of mind within it? We have to recognize how unique mind is: the *fact of knowledge* is more remarkable in itself than what is known: 'For the mind which knows is in a perfectly real sense equal to what it knows, and in another real sense transcends it, unless what it knows is another mind which also knows. . . . That there should "emerge" in the cosmic process a capacity to apprehend, even in measure to comprehend, that process is the most remarkable characteristic of the process itself.'²

It would seem then that the more completely we accept mind as part of nature, the more difficult it becomes to explain nature except in terms of mind. If the Cartesian dichotomy is to be avoided it is reasonable to argue that Process is akin to Mind: or at least 'to test the hypothesis that Mind contains the explanation of the World-

¹ *Ibid.*, p. 210.

² *Ibid.*, p. 129.

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Process'. Mind itself is not only a knowing but a purposive thing: it understands and seeks certain ends: it co-ordinates or integrates the living personality by reason of the principles with which it is equipped, and informs the *will*. The mind discovers in itself creative or originating powers, powers to bring about that which does not yet exist, as when a man decides to build a house, draws up a plan and specification, and carries the project through. *Mind also discovers a similar originating and constructive power at work in nature too.* 'Mind, then, though it appears within the Process at a late stage, discovers throughout that Process the activity of Mind. . . . That Mind is pervasive of Reality is a necessary inference from this method of apprehending the world.'¹

The discovery of values such as Truth, Beauty and Goodness is in fact recognition, in the world, of principles the mind discovers in itself. It is able to apply its inner terms of reference to the world: the process of evaluation is the selection or pursuit of that which in the world conforms to those principles. The enduring qualities which belong both to the individual mind and to the Mind pervading the world are what distinguish the world from pure chaos or flux.

'When we begin to follow up the theory that Mind Purposive, or Intelligent Purpose, supplies the explanation of the world, we are at once confronted with the fact that Purpose is directed primarily to Value or the Good, so that the theory involves the logical priority of Value to Existence. Objects come into existence, if this theory is sound, because they are good or because some good can be brought into existence by means of them.'²

It is at this point in his thesis that Temple breaks with Whitehead's philosophy of organism. In Temple's view, if the hypothesis is adopted that the whole process of nature is to be accounted for only by the intelligent and creative role of Mind, then Theism is the logical outcome. The Values in the light of which Mind works have meaning as *personally* sought ends, not as diffused and unattached principles. It is absurd to discover that the universe is to be interpreted in terms of Mind and then to dissociate Mind from the complex of Personality in which alone we discover it. Temple cannot see how the primordial nature of God, as explained by

¹ *Ibid.*, p. 219.

² *Ibid.*, p. 220.

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Whitehead, can in fact be the source of creativity or novelty without being much more than primordial.

'No doubt all this is supplemented by what is urged later concerning the "consequent nature of God". About this Professor Whitehead has much to say that is edifying, but it is hard to see by what right he says it. One is glad to know that he has the consolation of believing that "the love in the world passes into the love in heaven, and floods back again into the world", so that "in this sense God is the great companion—the fellow-sufferer who understands". This is very near the Christian Gospel, and if only Professor Whitehead would for creativity say Father, for "primordial nature of God" say Eternal Word, and for "consequent nature of God" say Holy Spirit, he would perhaps be able to show ground for his gratifying conclusions. But he cannot use those terms, precisely because each of them imports the notion of Personality as distinct from Organism. The very reason which gives the Christian scheme its philosophic superiority is that which precludes Professor Whitehead from adopting it.'¹

The rejection of Whitehead's philosophy of organism is the step by which Temple's own theory of process is brought within the fold of Christian doctrine. For all follows logically from the decision that personal mind discovers Mind purposively at work in the universe, for this implies Person as the creative source of all things. It is in the nature of Person to reveal itself: communication between person and person is itself a form of revelation. We are not to think of God as a remote first cause who has set his world in motion and then occasionally intervenes in it; or on the other hand as completely immanent. Rather we must conceive of a transcendent God who, though maintaining the order and laws of nature, is involved creatively in the world and of whom the whole of nature must constitute one revelation. However, revelations of a *special* character are also implicit in the notion of personality: revelation is a means of communication, and some means are more vital and fundamental than others. God transcendent is the 'eternally self-identical', but God immanent is an *active* principle. 'Miracles, if they occur, are as much the manifestation of God immanent as are the regular processes of Nature. God immanent is a principle or energy

¹ *Ibid.*, p. 259.

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of adjustment and therefore of variation.¹ And it is this which
brings us to the consummation of his argument—The Sacramental
Philosophy.

This is Temple's original contribution, and it may be summarized in this way. Christianity may be said to be the most materialist of all religions, and in this lies its great hope for the world. The Cartesian separation of spirit and nature, mind and matter, has brought only disaster. Christianity affords us the hope that we may be able to control the material, precisely because it does not avoid it. 'The Word was made flesh' is its most central saying. Christianity arises in history, is conscious of its historical roots, and is committed to a belief in the significance of the historical process. If it is true that the Word itself is made flesh, then life itself is incarnation, incarnation of spirit in matter. And so we are entitled to conclude that the Eternal 'fulfils itself in its historical self-expression'. If this were not so, the Eternal would be something other than it is.

Yet the relation between the Eternal and History is not that of complete reciprocity as in Whitehead's philosophy where God and the World are the two poles of one Creativity: on the contrary, though 'the historical depends on the eternal for its very existence, and the Eternal does not, *for its existence*, in the smallest degree depend on the historical'.²

The values found in the historical are such as belong to the eternal. And if the eternal did not partake of these values, was not interested in them, then history would be meaningless and the nature of man unintelligible. General consideration of Process points to the existence of the 'eternal ground' of which Temple has been speaking and 'This ground we have found, must be spiritual; in all positive content of the term "personal" it must be personal; it must be the living God.'³

'To put the matter once more in terms of Christian belief; the death and resurrection of Christ did not cause God to be after their occurrence what He was not before, but neither are those events without meaning and value for His eternal being. On the contrary. His eternal being, in being what it is, requires self-expression in those events, and while the events make no difference in the quality of love which is expressed in them, yet the activity of the expression

¹ Ibid., p. 295.

² Ibid., p. 480.

³ Ibid., p. 480.

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is a part of the fullness of the eternal love. Thus we may truly say that the glory of God is not only revealed in, but actually in part consists in, the death and resurrection of Christ.¹

The relationship of God to his Creation is like the relation of God to the passion of Christ. A thing or event is hallowed by His participation in it and Temple argues that even though all things are in some sense a revelation of God, when a material thing becomes in a *special* way the symbol and sign of the presence of the Eternal, what comes into existence is a sacramental relationship. 'Within the sacramental scheme or order, the outward and visible sign is a necessary means for conveyance of the inward and spiritual grace [it has] its whole significance in that function. . . . A sacrament is something more than a divine poem, because it conveys (as is believed by those who make use of it) not only God's meaning to the mind, but God Himself to the whole person of the worshipper.'²

In a special sense God is present in and speaks through acts of sacrament and of revelation: in a general sense the material world is redeemed by the Incarnation of the spirit within it. If we reject this doctrine then we find ourselves on the path which leads to the alienation of the physical world from the spiritual. The physical is left to go its own way unchecked by spirit; and spiritual exaltation has its inevitable counterpart in bodily immorality. The unity of man's life is broken. Religion becomes 'a refined occupation for the leisure of the mystical', man's material activities the opportunity for 'uncurbed acquisitiveness'. 'It is in the sacramental view of the universe, both of its material and of its spiritual elements, that there is given hope of making human both politics and economics and of making effectual both faith and love.'³

It has been many times said that it is the task of each generation of Christians to restate its faith in a contemporaneous way, to interpret the issues of the times in relation to the Gospels, and the Gospels through the experience of the times. In English thought and in Christian practice in the first half of the twentieth century, the burden of these tasks was borne principally by William Temple.

¹ *Ibid.*, p. 481.

² *Ibid.*, pp. 482-4.

³ *Ibid.*, p. 486.

CHAPTER SEVENTEEN

A Retreat from Philosophy?

BERTRAND RUSSELL (b. 1872)

A. J. AYER (b. 1910)

GILBERT RYLE (b. 1900)

WINSTON H. F. BARNES (b. 1909)

JOHN WISDOM (b. 1904)

DOROTHY M. EMMET (b. 1904)

R. G. COLLINGWOOD (1889-1943)

I

In the nineteenth century philosophical positions were fairly well-defined. Not simply philosophers, but thinking people generally divided their allegiance between three metaphysical positions. The first was the materialist one—that the universe consisted of matter, and that every event which occurs is the exact consequence of causal forces at work in the universe up to the moment of its occurrence. Materialism lent itself to a rigid determinism, and it was so well adapted to the physics of Sir Isaac Newton, that it was held in one way or another by most nineteenth century physicists. The second theory was the Cartesian dualism which most ordinary people accepted—the philosophy, if one likes, of common sense still—that there are two substances, mind and matter, and that they interact but in ways not fully to be understood. This theory was often called spiritualism, from the belief that 'spirit' works among material things. Its relevance to Christianity is clear from the study we have just made of the work of William Temple, but to European humanism, too, dualism was an accepted and is still an acceptable point of view. It streams from the Platonic conception

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of divine and eternal, as well as earthly, forms, and we find it so powerfully at work in every stage of English philosophy that it re-emerges in a new form in Whitehead and C. E. M. Joad, as in the American, Santayana. The third position is that of idealism—that all is spirit, that all earthly or material things are simply manifestations of this spirit, which in its completeness is the Absolute.

'Nowadays,' Bertrand Russell has written, 'these fine old simplicities are lost: physicists assure us that there is no such thing as matter, and psychologists assure us that there is no such thing as mind. This is an unprecedented occurrence. Who ever heard of a cobbler saying that there was no such thing as boots, or a tailor maintaining that all men are really naked? Yet that would have been no odder than what physicists and certain psychologists have been doing.'¹ And with that irony which is his signal charm as a writer he goes on to show that while the materialist with some success reduces mind to material phenomena, he finds himself confronted by the fact that the body itself 'is really an elaborate scientific construction not corresponding to any physical reality'. The mind is body, but body all the same is nothing but 'a convenient concept of the mind'. Mind and matter are rather like the lion and the unicorn fighting for the crown: 'the end of the battle is not the victory of one or the other, but the discovery that both are only heraldic inventions'.

Sir James Jeans, in *The Mysterious Universe*, argued that the universe could no longer admit of material representation: it has become 'a mere mental concept'. It was no longer satisfactory to label things 'real' or 'ideal'—the true label was *mathematical*. How little this helped was shown a few pages later when Sir James told us that 'a mathematical formula can never tell us what a thing is, but only how it behaves'. And as for the attack on mind, William James, the pragmatist, writing in 1904 in an essay entitled *Does Consciousness Exist?* argued that consciousness certainly did not stand for an entity, though it might be held to describe a function. The function was *knowing*. But as to who or what did the knowing he was not very illuminating, indeed it did not appear necessary that there should be a being to whom the knowing was of value. 'Consciousness' is supposed necessary to explain the fact that

¹ 'What is the Soul?' in *Let the People Think*, London, 1941, p. 111.

things not only are, but get reported, are known.' And it possessed no more validity than the ether of the nineteenth century physicists. And Bertrand Russell has carried forward the attack on common-sense assumptions to the point at which he throws doubt upon the reality of the Self and shows himself a true disciple of Hume: 'What can we know about Mr. Smith? When we look at him we see a pattern of colours; when we listen to him talking, we hear a series of sounds. We believe that, like us, he has thoughts and feelings. But what is Mr. Smith apart from these occurrences? A mere imaginary hook, from which the occurrences are supposed to hang. They have in fact no need of a hook, any more than the earth needs an elephant to rest upon.'¹

It is, to say the least, a confusing picture. One can understand T. S. Eliot's gloom when he wrote, in 1925, in the heyday of this kind of thinking, appropriately about *The Hollow Men*,

*Shape without form, shade without colour,
Paralysed force, gesture without motion*

and no one would have blamed him had he concluded that philosophy too was about to end

Not with a bang, but a whimper.

In face of the unprecedented challenge of physics and psychology the reaction of contemporary English philosophy is on the whole pessimistic—a generalization which will probably not be allowed to go unchallenged. The optimists, Alexander, Whitehead and Temple have passed on. No one, at least of their stature in their field, remains to uphold a modified idealism and platonism, and to reconcile it with evolution and science. Two most influential contemporary philosophers, Bertrand Russell and A. J. Ayer, are pessimists. They hold that the role of philosophy is over, that it can at best hope to put in logical order the findings of contemporary science. 'Philosophy must develop into the logic of science,' A. J. Ayer has said, while Russell has averred that philosophers of his school 'refuse to believe that there is some "higher" way of knowing, by which we can discover truths hidden from science and the intellect'. So philosophy is to become the office boy, in charge of

¹ *History of Western Philosophy*, p. 224.

the filing cabinet of scientific discoveries: or if a more dashing metaphor is preferred, philosophy is the cabin boy clapped down below while the scientist is at the wheel of the ship in a blizzard. Yet even an anti-philosophy becomes by some fatality a new philosophy of its own. Bertrand Russell, and the disciple whom he repudiates, A. J. Ayer, have become famous philosophers in their turn, and relish the role.

Earl Russell, or Bertrand Russell as he prefers to be known professionally, is the third of that trilogy of great Victorians who did most to form the minds of the young and eager in the first thirty years of this century. It goes without saying that the other two were H. G. Wells and George Bernard Shaw. In fact, Russell has, quite apart from his standing as a philosopher, a world reputation as a prophet and appeared once more in a minatory role before the microphone, on his eightieth birthday, while these pages were being written. He is a virile old man. At the age of seventy-six, when he was flying to Norway to lecture, his plane crashed in the sea. Nineteen persons were drowned, but Bertrand Russell saved himself by swimming in a heavy overcoat for ten minutes before he was picked up. He could not understand afterwards why anyone should want to postpone his lecture.

Yet his life began badly, for his mother, father, and a sister died during his infancy, and his own destiny was the subject of a court order about which he has waxed bitter. His father was a free-thinker who wished him to be 'brought up without superstition' and to that end appointed two free-thinkers as his guardians. But the courts set aside the will and had the boy educated in the Christian faith. There followed a lonely and unhappy childhood during which he was educated by a succession of governesses and tutors and cut off from the companionship of children of his own age and interests. From a bout of intensely religious feeling at puberty, during which he was continually on the verge of suicide, he was saved by reading the *Autobiography* of John Stuart Mill, who had been the friend of his father, and was one of the agnostic guardians appointed under his father's will. He let go of the uncertainties of God and sin, and took hold instead of Euclid and mathematics. Yet even so with some difficulty about *their* infallibility, for his brother has put it on record that he was not ready to take Euclid's

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axioms for granted, and was disappointed to find that they were not so self-evident as they were made out to be.

His mathematical bent was prominent from the age of eleven. At Cambridge he combined it with interest in philosophy. He was first of all a follower of Bradley, but G. E. Moore put him on the new path, of a modified or scientific realism, which he has pursued ever since. He has also acknowledged his debt to the *Tractatus Logico-Philosophicus* (1922) of Wittgenstein, his Cambridge friend, a turning-point in the study of the significance of language. Indeed Bertrand Russell wrote an important introduction to the English edition of the *Tractatus*. However, Wittgenstein was in the future. In 1900 Russell attended the International Congress of Philosophy in Paris with his friend and erstwhile tutor, Alfred North Whitehead. Of the significance of the partnership which grew out of their friendship and mathematical genius I have already written. Russell's first important book, *The Principles of Mathematics*, came out at this period. Through all these years, however, he was vigorously pursuing political and social causes. He met Sidney and Beatrice Webb, and Sidney became for him his 'representative' man! Beatrice Webb wrote of him then that he was 'carefully trimmed, conventionally correct and punctiliously polite. . . . In morals, he is a puritan; in personal habits almost an ascetic.' It is doubtful if this is a judgment which now applies, but the shrewd summary of his intellectual nature still holds its sting: 'in his thought he is almost violently impatient of bad reasoning: a right conclusion come to by bad argument is offensive to him: it is the *perfection of the reasoning* that he seeks after, not truth of the conclusions.'¹

Russell became a Fabian. He stood as a women's suffrage candidate in a parliamentary election for Wimbledon. He was defeated, and was soon in trouble for his political views. When the First World War broke out he declared himself a conscientious objector. A number of pacifists had been sentenced for distributing a leaflet about the case of a conscientious objector and Russell wrote to *The Times* declaring his authorship of it and inviting prosecution. It came, and he was fined and his library distrained upon to pay the costs. In 1918 he was sentenced to six months' imprisonment and

¹ *Our Partnership*, London, 1948, pp. 216, 217.

wrote, in prison, his remarkable *Introduction to Mathematical Philosophy* which thus takes its place beside *Pilgrim's Progress* and *Don Quixote* among the masterpieces composed in jail. Even at the University too the scales were weighted against him for he did not get his expected Fellowship.

'I was invited by Trinity College, Cambridge, to become a lecturer, but not a Fellow. The difference is not pecuniary; it is that a Fellow has a voice in the government of the College and cannot be dispossessed during the term of his Fellowship except for grave immorality. The chief reason for not offering me a Fellowship was that the clerical party did not wish to add to the anti-clerical vote. The result was that they were able to dismiss me in 1916, when they disliked my views on the war. If I had been dependent on my lectureship, I should have starved.'¹

Strangely enough, the persecution of which England was guilty in the First World War was repeated by the United States at the beginning of the Second. In 1940 Russell was appointed Professor of Philosophy at the College of New York City and a suit was brought by the wife of a dentist to remove him on the grounds that Russell had advocated 'free love': the Judge who revoked the appointment described it as 'an attempt to establish a chair of indecency'. These are some of the experiences which, perhaps, have caused this urbane man to castigate the human race, saying that though he has been taught that man is a rational animal he has failed to find any evidence of this. On the contrary, 'I have seen cruelty, persecution and superstition increasing by leaps and bounds until we have almost reached the point where praise of rationality is held to mark a man as an old fogey surviving from a bygone age.'²

After the First World War Russell visited China, Japan and Russia. For China, and Chinese ways, he has often expressed the highest admiration (though that was long before the victory of the Communists), but his meeting with Lenin, Trotsky and Gorki only deepened his scepticism about the Russian revolution. What he thought about it all he described in *Practice and Theory of Bolshevism* (1920). In 1940 he renounced pacifism: since the Second World War the spectacle of Communist aggression led him to become the

¹ 'Free Thought and Official Propaganda' in *Let the People Think*, p. 26.

² *Unpopular Essays*, London, 1950 p. 95.

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advocate even of deterrent war. History had taken its revenge of his early, naïve idealism.

In 1921 his first marriage was dissolved. Of his second, two children were born. This opened up educational interests which led to the founding of an experimental school at Beacon Hill, near Petersfield, where his own children were educated with others on progressive lines which included freedom from clothes and discipline. To his third marriage, in 1937, at the age of 63, a son was born. Late in life honours have fallen thick upon him: in 1949 he received the Order of Merit, and he was awarded the Nobel Prize for Literature. It was deserved: in half a century of philosophical and humanist writing he has produced more than thirty-five volumes: there is hardly a bad one amongst them.

So much then for the brief details of his life. His philosophy falls naturally into two parts—his social philosophy, and his analytical empiricism. They have only one real connecting link, his admiration and respect for science. Bertrand Russell's importance as an analytical empiricist rests upon two ends which he has pursued with tenacity ever since his first works on mathematics. The first is the attack on traditional logic and the establishment of a new logic which embraces mathematics. In a preface to the second edition of *The Principles of Mathematics* he again affirmed his fundamental thesis, that mathematics and logic are identical. The second is the attack on philosophy itself, an attack which carries on the work of the English empiricists and seeks to limit philosophy to those things which can be proved by the deductive processes of logic, or by scientific methods.

An examination of his role as a mathematician (even were I equipped for it) would take me beyond the scope of this book, but the nature of his attack on traditional logic, so closely identified with it, can be gleaned from a footnote which appears in his work *Our Knowledge of the External World* (1914). In this footnote, surely the most devastating in the whole history of philosophy, he attacks Hegel for founding his system on bad traditional logic.

'Hegel's argument in . . . his "Logic" depends throughout upon confusing the "is" of predication, as in "Socrates is mortal", with the "is" of identity, as in "Socrates is the philosopher who drank the hemlock". Owing to this confusion, he thinks that "Socrates"

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and "mortal" must be identical. Seeing that they are different, he does not infer, as others would, that there is a mistake somewhere, but that they exhibit "identity in difference". Hegel sees that *mortal* is universal, and *Socrates* is particular, and 'does not suspect a mistake, but proceeds to synthesize particular and universal in the individual, or concrete universal. This is an example of how, for want of care at the start, vast and imposing systems of philosophy are built upon stupid and trivial confusions, which but for the almost incredible fact that they are unintentional, one would be tempted to characterize as puns.'¹

Bertrand Russell brought his analysis of language and logic up-to-date in *An Inquiry into Meaning and Truth* (1940). His purpose there was to consider whether there was any empirical evidence for the truth of a proposition, and if there was, what that implied for language and for the reality it purported to describe. He analysed logic, and the critiques of logical positivism, and concluded that there is 'a discoverable relation between the structure of sentences and the structure of the occurrences to which the sentences refer. I do not think the structure of non-verbal facts is wholly unknowable, and I believe that, with sufficient caution, the properties of language may help us to understand the structure of the world.'² As a result, not only were the 'universals' which had been under fire from the empiricists since the days of scholasticism readmitted as valid, but the subject-predicate form received a partial reprieve. Russell's view of it, he said, 'differs only in that it regards the "subject" as a bundle of compresent qualities'. In his Introduction Russell doubted whether his conclusions were going to have any value, but at least they helped to dispose of the notion that in speaking language, language is all we know. 'Complete metaphysical agnosticism is not compatible with the maintenance of linguistic propositions.'³

Russell's philosophy has borne many names. In *Contemporary British Philosophy* (1st Series: 1924) he described it as 'logical atomism'. Elsewhere it is described as 'logical analysis' or 'analytical empiricism'. Perhaps the last title is most satisfactory, for he is in the empirical tradition of David Hume, and he is strictly analytical, and the title avoids confusion with the fashionable 'logical posi-

¹ Op. cit., p. 39.

² Op. cit., p. 341.

³ Ibid., p. 347.

tivism' which Russell has himself attacked. His analytical tendency is brought out most strongly in the last chapter of *History of Western Philosophy* where he argues that philosophy has consistently fallen between two stools: on the one hand it has tried to be an ethical doctrine about the good life, or the best way of living: on the other it has set out to present a theory of the nature of the world. The two are incompatible: when pursued 'the desire for edification' affects the opinions of philosophers 'as to the constitution of the universe'. All system-building is rejected in favour of a rigorous analysis, the conclusions of which are not to be prejudged or censored by a moralizing tendency. To this vocation he has remained remarkably consistent and for this reason his last great philosophical work *Human Knowledge: Its Scope and Limits* (1948) yields the most mature exposition of his point of view. We will therefore examine it.

The whole English empiricist tendency has been to resolve everything into *perception*: and the fatal consequences of this for philosophy and for commonsense are to be found first in Berkeley's near-solipsism, and secondly in Hume's scepticism concerning human reason. The school, therefore, which began in a determination to root itself in the given human experience ended in a conception of the 'unknowability' of anything except subjective experience. Where does Bertrand Russell stand in relation to this? He accepts to begin with the general empirical view, that the 'mental event' is all that we know without inference.

'What I know without inference when I have the experience called "seeing the sun" is not the sun, but a mental event in me. I am not immediately aware of tables and chairs, but only of certain effects that they have upon me. The objects of perception which I take to be "external" to me, such as coloured spaces that I see, are only "external" in my private space, which ceases to exist when I die—indeed my private visual space ceases to exist whenever I am in the dark or shut my eyes. And they are not "external" to "me", if "me" means the sum-total of my mental events; on the contrary, they are among the mental events that constitute me.'¹

If there are no essential differences between my perception of the sun, and my memory of yesterday's football match—if they are

¹ *Human Knowledge: Its Scope and Limits*, London, 1948, p. 241.

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both, that is to say, equally contents of my mental experience, then it is easy to see that Russell is driven towards the position which Berkeley occupied. By the same argument he is led towards the doctrine of Kant, that time and space are the constructs of the mind; as when he argues that: 'When you both see and feel a pin touching your hand it is only experience that enables you to identify the point of contact seen and the point of contact felt by touch. To say that they are the same place is convenient, but in psychology it is not strictly accurate: what is accurate is that they are correlated places in two different spaces, visual and tactful.'¹ One therefore possesses not simply one private space, but many private spaces, one at least for each of the senses, and it is simply for convenience that we lump these private spaces together and create the unified private space of common sense. But that does not make the amalgamation 'ultimately true'. Much the same can be argued about time, and such intensely subjective conclusions threaten to land us in solipsism.

But Russell analyses the solipsistic difficulties brilliantly. The less drastic form of solipsism argues that my mental contents exceed those given to my immediate perception. I count in my solipsistic universe not only the desk and the typewriter and the view of the park before me, so to say, but other things which are recalled to me. As Russell says, the sight of an old diary reminds me of engagements long forgotten: yet from the experience of reading the entries I infer what actually happened. In other words, *inferred* mental states are permitted in this more tolerable form of solipsism, and through them I construct a universe not altogether given to my immediate perception. But this, Russell says, is illogical. There is no difference in principle between inference from one mental state which is given, to mental experiences which are not given, and 'inferences to physical objects and other minds'.

The extreme of sceptical solipsism alone is logically tenable: it must hold that the universe consists only of the items which at the moment we perceive or remember: it must omit what we might notice, if we tried, for that is an inference. But this leads even to the possibility that the connection between present events and past events in my memory must also be denied, and sense of identity too,

¹ *Ibid.*, p. 236.

since these may also prove to be inferences. The pursuit of the empiricist point of view as far as solipsism leads either to the acceptance of 'solipsism in its most rigorous form, or we must admit that we know, independently of experience, some principle or principles by means of which it is possible to infer events from other events, at least with probability'.¹ The *reductio ad absurdum* of the empiricist argument permits Russell in fact to escape from it to the position where he is able to argue that science does present us with a picture of the universe not wholly false.

Of course, the problem of *what* science is talking about is at least as old as empiricism. If secondary qualities belong to the perception, primary qualities must, too, and then how is the thing-in-itself known? By inference, Bertrand Russell argues, as we know, or assert that we know, so many other things. It would be irrational to reject what science asserts about physical objects because of the difficulty of determining how those objects are known to us. Science works. Its causal laws must have some relation of probability to the manner in which the universe works. And science itself has something to say of importance about the relation between our percepts and physical objects. Thus if from our perceptions we are to be allowed to infer separate physical objects, like the items on my desk or the people in the park, then we have to support this *prescientific common sense* by means of the assurance of science that there are 'separable causal chains': in this instance light-waves which, emanating from one source (the sun), nevertheless pursue their separate courses unaffected by each other and so enable us to see many separate objects at once, instead of one universal 'light'. Science tells me that I am receiving separate impulses from each source defined in my perception: it gives therefore a rational account of the definitions of objects already made by my perception. But we have to remember the penumbra of vagueness which surrounds these perceptive acts. The sun I think I am seeing is, according to science, eight minutes farther on along its journey. If, down the road, I see a man hammer at an iron stake, the sound of each stroke reaches me an appreciable time after the sight of it. But the sight, too, is fractionally out. And as for distances, how vague and inexact are our judgments of them: the high clouds, the sun, moon

¹ *Ibid.*, p. 195.

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and the stars of the Milky Way all appear about the same distance away. At least we cannot determine by sight the differences between their positions. 'It is clear that the relation of a percept to the physical object which is supposed to be perceived is vague, approximate, and somewhat indefinite.'¹

Science is nevertheless able to construct a *physical* space, superior to and including (and explaining) *private* space, much in the same way that a historical time is constructed which includes and justifies private time. The world of *physical* space includes the physical objects we infer from our perceptions and is more exact about them and corrects any hasty generalizations made about them by our perception: thus the world of *physical* space fills in the blanks of private perception. We ourselves are among the physical objects occupying both *private* and *physical* space. Thus from empiricism Bertrand Russell moves to what appears at first sight to be an old-fashioned materialism in which the superior reality of the objective world is justified. Science discovers the general laws of that world: and these general laws, though lacking the complete accuracy which science once awarded them, have nevertheless a high degree of probability.

It remains then to ask what kind of a picture of nature they give. And here, of course, an old-fashioned materialism has to be abandoned precisely because of the progress of atomic physics in the last few decades, and the special and general theories of relativity. Russell grapples with the same problems as Whitehead, and like him rejects the traditional conception of substance. Just as, for Russell, psychological knowledge can be stated without introducing the 'Self', so material qualities can be explained without introducing the notion of a material 'substance'. This is also epistemologically important for him, for he never tires of explaining how the subject-predicate form of language is a net cast before the feet of the unwary, that we are tricked by it into imagining that reality has a nature we cannot in fact discover in it. ' " Substance", in fact,' he wrote in *History of Western Philosophy* 'is merely a convenient way of collecting events into bundles.' And to get rid of it 'is important in theology, as abolishing all supposed knowledge of the "soul". It is important in the analysis of knowledge, since it

¹ *Ibid.*, p. 223.

shows that the category of subject and object are not fundamental.¹

Physics has disposed of the conception of the hard material particle: the theory of relativity has made it impossible to conceive of such particles occupying portions of an absolute space and enduring through neutral time. And it follows that *events*, and not particles must be assumed to be the basic 'stuff' of physics. However, to secure the same structure in events as science assumes and successfully exploits in the older view of 'matter', the banished particle must be replaced by *series* of events succeeding each other in such a manner that, as with the illusion created by a film, a picture of reality is obtained. The events must be historically bound together so that there is continuity of form and nature in them, and so that the present event is causally linked with past events, and gives birth to structurally similar future events.

This involves a complicated analysis of the way events may be ordered within the four-dimensional manifold of space-time. It is first of all necessary that each event *shall be unique*: then that we shall be able to recognize in the physical world the diversity of objects which we take for granted in perception: and since these objects appear to endure (which means that we recognize their qualities again) we must make allowance for qualities which repeat themselves. Bertrand Russell explains that the rejection of the 'particular' involves a new notion of what he calls 'a complex of compresence'. This difficult conception may be explained in this way: qualities recur and we recognize them: but on each occasion that they occur the context is unique. How is it possible to recognize the recurring quality in the unique and therefore non-recurrent situation? Whatever I experience, as a *particular* experience, is bound up with the experience of *other* particular things: so that each moment of my life is, in this sense, unique and unrepeatable exactly in this context, and it is this which gives history to my life. Russell transfers this notion from its psychological context to a physical one: many things happen simultaneously in every place in space-time just as perceptions happen simultaneously in my mind. *Simultaneous* occurrence is not perhaps quite accurate, for there will be an overlap in each direction. But it is possible to illustrate this graphically and to draw

¹ Op. cit., pp. 264, 688.

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a central horizontal line through a series of vertical dashes in echelon and to say, of all the dashes the line touches or bisects, that these are the qualities compresent with that event. 'When it is no longer possible to find anything compresent with all the constituents of the complex, I call the complex "complete". Thus a "complete complex of compresence" is one whose constituents have the two properties (a) that all of them are compresent, (b) that nothing outside the group is compresent with every member of the group. . . . Complete complexes of compresence are the subjects of spatio-temporal relations in physical space-time. For empirical, not logical reasons, it is highly probable that none of them recurs, i.e. that none of them precedes itself, or is north of itself, or west of itself, or above itself.'¹

A complete complex is, for him, a space-time point-instant. The 'event', however, is an *incomplete* complex, which occupies a continuous region in space-time, that is stretches over at least two space-time points. The event becomes, then, the historical track and now appears to bear the nature of the Newtonian particle, and to be caught up in the longer historical routes of (I assume) larger aggregations of events, such as a man. The notion of quality which gives so much trouble if a subject-predicate relationship is not to be invoked, and uniqueness is to be maintained, is not dismissed. An *instance* of a quality is a 'complex of compresent qualities' of which the named quality is one. For example, Russell explains, the *instance* of a man has other qualities apart from his humanity—colour, nationality, physical and mental capacities and qualities and so forth. But each of these qualities exists in other connections: 'It is only the assemblage of qualities that makes the instance unique. Every man, in fact, is defined by such an assembly of qualities, of which humanity is only one.'² Nevertheless the qualities are the recurrent element in events which are otherwise unique: despite the vagueness which attaches to the definition of a quality (like 'red' for instance) qualities are to be recognized as more or less identical with their previous occurrences: but the context, it must be said once more, is empirically non-recurrent, though not necessarily logically so.

¹ *Human Knowledge: Its Scope and Limits*, p. 322.

² *Ibid.*, p. 316.

'Events' must be subject to laws, they must not happen spontaneously or irresponsibly or Russell's case for science will be overthrown. He has said that the physical events may form a set or group within 'minimal region' and that the behaviour of light and sound waves, which change in nature from region to region (and so in their effect upon our perception) indicates the presence of, and enables us to define in perception, these minimal regions in physical space. Events, in fact, take place throughout space-time, but certain regions of space-time expose peculiarities and these peculiarities, regular in their occurrence and consequences, we label *matter*. It is the nature of 'matter' in space-time to appear as a kind of hump or tube or track—something more extended along one dimension of space-time than along the others. 'Such a tube consists of the "history" of a piece of matter. . . . Not only is space-time very peculiar within a piece of matter, but it is also rather peculiar in its neighbourhood, growing less so as the spatio-temporal distance grows greater; the law of this peculiarity is the law of gravitation.'¹

It is manifest with what determination Russell seeks to reconcile (a) the world of perception and the world of science and (b) the world of individual objects possessing defined qualities with the space-time continuum which it is difficult to picture otherwise than as undifferentiated. Like the cosmologies of Alexander and Whitehead it must be recognized as most tentative and hypothetical and in need of introduction to Occam's razor. The new synthesis or clarification in relation to space-time physics has yet to be made. But in seeking to make plain Russell's metaphysics I have done less than justice to *Human Knowledge: Its Scope and Limits* which as its title indicates has another argument my analysis so far has failed to disclose: it is, what do we know, and how do we know it, and how far do we really know what we think we know? For instance, the scientific point of view is impossible without the acceptance of general laws which can be defined with a reasonable degree of probability. Can we really arrive at them? If not, science has nothing to say and the scepticism of Hume must prevail. Albeit sceptically, Russell nevertheless sets out to establish that there are these laws,

¹ 'Logical Atomism' in *Contemporary British Philosophy*, Series 1, London, 1925, p. 381.

even though their accuracy is not as great as we imagine. John Stuart Mill had argued that the familiar scientific process of induction was something beyond mere enumeration. That is that there was no induction unless something was argued into the evidence which induction had produced, some generalization or inference, in fact. Russell accepts the process of *inference*: it is that, indeed, by which we come at knowledge of other minds, and at scientific knowledge of physical objects occupying *physical* space in contradistinction to the subjective experience of the objects of our private perception, which of course occupy *private* space. But by what right *do we infer*, particularly when our inference leads us to assume laws of causation and to predict what has not yet happened? Russell examines theories of induction, of probability, of degrees of credibility, of knowledge which transcends experience, and of causation and all that relates to it, with this purpose in mind.

In effect it brings him to a rejection of induction. 'There is nothing in the mathematical theory of probability'—and he examines all theories of probability—'to justify us in regarding either a particular or a general induction as probable, however large may be the ascertained number of favourable instances'.¹ Even in such a process as that of 'hypothetical induction' in which a theory is regarded as probable 'because all its hitherto observed consequences have been verified', does not differ essentially from induction by simple enumeration. 'For, if p is the theory in question, A the class of relevant phenomena, and B the class of consequences of p , then p is equivalent to "all A is B", and the evidence for p is obtained by a simple enumeration.'²

Scientific inferences, Russell argues, if they are to be valid must rest on laws of nature which describe real (or synthetic) properties of the actual world: but 'the truth of propositions asserting such properties cannot be made even probable by any argument from experience'. Inference, in fact, goes beyond what is permitted by induction, and without inference there are no laws.

His analysis of 'The Postulate of Scientific Inference' brings him to a definition of five such postulates, which should be compared with Mill's canons of induction and Newton's principles of sci-

¹ *Human Knowledge*, p. 435.

² *Ibid.*, p. 435.

tific philosophy. They are so important that they must be quoted:

'1. The postulate of quasi-permanence. Given any event A, it happens very frequently that, at any neighbouring time, there is at some neighbouring place an event very similar to A.

'2. The postulate of separable causal lines. It is frequently possible to form a series of events such that, from one or two members of the series, something can be inferred as to all the other members.

'3. The postulate of spatio-temporal continuity. This postulate is concerned to deny "action at a distance", and to assert that, when there is a causal connection between two events that are not contiguous, there must be intermediate links in the causal chain such that each is contiguous to the next, or (alternatively) such that there is a process which is continuous in the mathematical sense.

'4. The structural postulate. When a number of structurally similar complex events are ranged about a centre in regions not widely separated, it is usually the case that all belong to causal lines having their origin in an event of the same structure at the centre.

'5. The postulate of analogy. Given two classes of events A and B, and given that, whenever both A and B can be observed, there is reason to believe that A causes B, then if, in a given case, A is observed, but there is no way of observing whether B occurs or not, it is probable that B occurs; and similarly if B is observed, but the presence or absence of A cannot be observed.'¹

His conclusions are most significant for empiricism. 'All particular facts that are known without inference are known by perception or memory, that is to say, through experience. In this respect, the empiricist principle calls for no limitation.

'Inferred particular facts, such as those of history, always demand experienced particular facts among their premisses. But since, in deductive logic, one fact or collection of facts cannot imply any other fact, the inferences from facts to other facts can only be valid if the world has certain characteristics which are not logically necessary. Are these characteristics known to us by experience? It would seem not.'²

Hence empiricism has, as a theory of knowledge, in this degree

¹ *Ibid.*, Chap. IX, pp. 506-11. For Newton's principles see pp. 86-7, and for J. S. Mill's pp. 203-4.

² *Ibid.*, p. 526.

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failed. There is more than experience in our knowledge. But the discovery of its limitations has been made possible by 'strict adherence' to the empiricist method. And this method itself is inspired by the belief 'that all human knowledge is uncertain, inexact, and partial. To this doctrine we have not found any limitation whatever.'¹

Bertrand Russell's conception of man is a confusing one. In *Human Knowledge* he speaks almost in the language of William Temple of the nature of human knowledge, which in a sense puts man back at the centre of the universe. Man's mind is as vast as the immensities of space and abysses of time it mirrors. Yet he makes no use of this vision, and elsewhere in the book comes to conclusions almost indistinguishable from a mechanistic view of man, as, for example, when he argues that in the chain of events from sense-organ to brain and back to muscle 'the most probable hypothesis' is that 'everything is determined by the laws of macroscopic physics'.² It is therefore logical that Russell should accept 'for practical purposes' the scientific part of behaviourism, while rejecting the ethical and aesthetic theories which might be derived from it. Behaviourism, however, is mechanistic in the nineteenth century manner, and rests especially upon the assumption that a human being is an entity which can be conditioned. It is an odd theory therefore to marry with Russell's rejection of the 'Self': for who or what is to be conditioned? *Human Knowledge* in this respect simply re-states his rejection of the notion of 'Self', and says that though, for instance, we experience what we please to label 'Mr. Jones' in a variety of contexts, each experience is a different one and though it is convenient 'for many practical purposes to regard them all as having a common object' and to give it the name of Mr. Jones, language here is again misleading us into supposing that Mr. Jones is 'a single quasi-permanent entity', which is untrue.³ But if it is untrue that Mr. Jones, even physically, has that element of continuity which entitles us to regard him as single, and quasi-permanent, then no series of events in Russell's metaphysics possess such qualities either, and one is in strict logic in the presence of a

¹ *Ibid.*, p. 527.

² Cf. Chap. VI, 'The Physiology of Sensation and Volition'. pp. 54-6.

³ *Ibid.*, p. 76.

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reality completely discontinuous and unconnected about which it is useless to formulate any scientific laws whatsoever.

Bertrand Russell's *social philosophy* shows no such indifference to the existence of Mr. Smith or Mr. Jones. His epistemology may be analytical, sceptical and pessimistic in the extreme, but in his social philosophy he reinstates the absolutes his metaphysics destroy. Particularly he asserts the absolute value of man. It is sometimes as if we were in the presence of two philosophers, Bertrand and Russell, and as if Bertrand were not on speaking terms with Russell. A series of political and social polemics launched over half a century, witnesses to Bertrand's rage against injustice, intolerance and cruelty, and to a passion for a better world which is as green in him to-day as it was when he first joined the Fabian Society. It is a passion half-stoic, half-Christian in origin, as that essay, 'A Free Man's Worship' (*Mysticism and Logic*, 1918) long ago demonstrated. Russell writes as one aware of the shallowness of our 'insolent belief in the boundless possibilities of progress'. In an almost forgotten work, *Roads to Freedom*, speaking of a life lived in service rather than in greed, he wrote:

'This is the way of life recommended in the Gospels, and by all the great teachers of the world. Those who have found it are freed from the tyranny of fear, since what they value most in their lives is not at the mercy of outside power. If all men could summon up the courage and the vision to live in this way in spite of obstacles and discouragement, there would be no need for the regeneration of the world to begin by political and economic reform: all that is needed in the way of reform would come automatically, without resistance, owing to the moral regeneration of individuals.'¹

This passage leads to a most glorious spiritual peroration: but thirty years later he was still capable of making the same kind of plea in the Reith lectures, *Authority and the Individual*. It is Bertrand's presupposition throughout his social philosophy that the subject-predicate structure which his alter-ego Russell rejects, holds good. Man is to be made more free and more happy by the exercise of his reason, and by improved economic and political organization. There is no meaning in this reasoning if there is no given human entity to protect. Such an entity may not easily be capable of definition, but that is not the point: one must accept the presupposi-

¹ Op. cit., London, 1918, p. 188.

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tion that it exists before predicating with passion certain things about it. To say that a man can be free, or can be enslaved, can accept truth and reject error, is in fact to re-introduce the subject-predicate structure and to say that the subject is more than the compresence of its qualities, that it is improved by sloughing off some accidentals and acquiring others, and that there is an enduring *what* to which the history of its relations with other *whats* is a matter of permanent importance. It is to reject the argument that 'one has no need for Mr. Smith', who is only a peg upon which to hang certain disconnected perceptions. Nor can Russell sustain it, and in *Human Knowledge*, for instance, Russell sometimes speaks with Bertrand's tongue as when he declares that a human being 'acquires beliefs' or that 'the whole of our cognitive life is an adjustment to facts'. There is a passage in Bertrand Russell's essay on 'The Ancestry of Fascism' in which he chidingly speaks of how horrified William James would have been to see the use to which his pragmatic view of truth was put by the National Socialists. But one day historians may connect his own philosophical nihilism with our age of terror and war.

Whitehead makes the point in those delightful essays *Nature and Life* that science, physics particularly, has destroyed the conception of Nature as composed of permanent things possessed of identity and moving about in space and enjoying relations between them which do not destroy their basic character. But he warns us that 'This common-sense notion still reigns supreme in the workaday life of mankind. It dominates the market place, the playgrounds, the law courts, and in fact the whole sociological intercourse of mankind. It is supreme in literature and is assumed in all the humanistic sciences. Thus, the science of Nature stands opposed to the presuppositions of humanism. Where some conciliation is attempted, it often assumes some sort of mysticism. But in general there is no conciliation'.¹ Indeed, there is growing confusion, for in the increasing specialisation of the sciences it often happens that one science takes for granted, and builds its laws upon, certain presuppositions taken from another science and long outmoded in it. Thus biology seeks to introduce into its science a materialistic

¹ Op. cit., p. 15. See Lancelot Law Whyte, *Next Development in Man*, London, 1944, for an attempted conciliation.

mechanism which has disappeared from physics. This all points to gaps in contemporary thinking which it is the task of metaphysics to fill by a new simplification or synthesis: alas, one cannot point anywhere to an eagerness to do so.

There is a happy convention that the historian is excused the discussion of the work of living men. I have already broken it. It seemed to me that a history of English philosophy which took no account of the work of Bertrand Russell would be incomplete and unrelated to the contemporary movement. Though there would seem no logical reason why I should not go on to survey contemporary English philosophy, it would in fact entail another book and I shall conclude by speaking briefly of the prevailing—or at least proselytizing—school in England, that of *logical positivism* and of other philosophical views which cast significant light upon it.

Logical positivism enjoys much the same vogue in England as existentialism does in Paris, and is the subject of somewhat similar polemics, though there the resemblance between them ends. For existentialism, though it prefers not to be told this, is in fact seeking a new theory of being which will transcend the limitations of physics and psychology, while logical positivism is in part a reduction of philosophy to those positions or assertions permitted by the laboratory bench. The one is Gallic in temper and German in scholarship, and has in the background the passion and genius of Kierkegaard: the other is arid in the gentlemanly English academic manner, and breaks no heads. Logical positivism belongs to the wider movement of scientific empiricism. It has roots in the Vienna circle founded by Schlick in 1924, through which the works of Carnap became well-known. In England the work of Wittgenstein on language and symbolism and the analysis of language undertaken by Bertrand Russell are among its principal sources. It was officially born when A. J. Ayer, now Grote Professor of Mind and Logic at University College, London, but then a Research Student at Christ Church, Oxford, published a brilliant little work, impeccably written, called *Language, Truth and Logic*, which has been many times reprinted and was recently (1946) issued in a second edition with a new introduction which softened somewhat the austerities of the original doctrine.

Language, Truth and Logic begins with a vigorous attack on transcendentalism of any kind: 'One way of attacking a metaphysician who claimed to have knowledge of a reality which transcended the phenomenal world would be to enquire from what premises his propositions were deduced. Must he begin, as other men do, with the evidence of his senses? And if so, what valid process of reasoning can possibly lead him to the conception of a transcendent reality? Surely from empirical premises nothing whatsoever concerning the properties, or even the existence, of anything super-empirical can legitimately be inferred.'¹

From this forthright beginning, which might have come from David Hume, Ayer moves to the charge: 'Our charge against the metaphysician is not that he attempts to employ the understanding in a field where it cannot profitably venture, but that he produces sentences which fail to conform to the conditions under which alone a sentence can be literally significant. Nor are we ourselves obliged to talk nonsense in order to show that all sentences of a certain type are necessarily devoid of literal significance.'²

Sentences like 'God is good' or 'Lying is wrong' or a remark of Bradley's 'The Absolute enters into, but is itself incapable of, evolution and progress' are the kinds of 'nonsense' Ayer has in mind.

'The criterion which we use to test the genuineness of apparent statements of fact is the criterion of verifiability. We say that a sentence is factually significant to any given person, if, and only if, he knows how to verify the proposition which it purports to express—that is, if he knows what observations would lead him, under certain conditions, to accept the proposition as being true, or reject it as being false.'³

Mathematical or logical expressions are absolved from verification because they refer to nothing: they are tautological, and when one says that 2 plus 2 equals 4 one is in effect saying that 4 equals 4, which is self-evident. But for all other fields than this a sentence to be literally meaningful must contain a proposition which is verifiable by experiment, observation, or experience. Statements containing no such propositions are nonsense, and this goes for most of poetry, metaphysics and theology.

¹ Op. cit., 2nd edn., p. 33.

² Ibid., p. 35.

³ Loc. cit.

This analysis tends to reduce the field of knowledge to that covered by sense experience, and it is significant that Professor Ayer defines the self as 'a logical construction out of sense-experiences'—that is to say 'the organic sense contents which are the elements of the same body'. And at the same time he rejects the notion of the self as a substance, for such a substance is 'an entirely unobservable entity'. His relationship to Russell is obvious, therefore. Russell, however, who has shown that 'verifiability' is the most difficult of all conceptions, rejects his theory, for if the principle is adopted that nothing makes sense which cannot be verified, then Russell's doctrine of inference is threatened and the physical world of objects, as against the private world of perception, faced with dissolution. However, logical positivism is a developing philosophy still. A. J. Ayer is a young man and what he may have to say about his own theory may rapidly outdate any analysis which might be embarked upon here. A most readable polemic has been launched against it by C. E. M. Joad—*A Critique of Logical Positivism* (1950) and to this, as to Ayer's own writings, the reader is referred. In his introduction Joad speaks of the new philosophy as being dogmatic and intolerant and lends his weight to the view that logical positivism is part of the negative climate of opinion of our times which, by scorning value judgments and ethical principles, was favourable to Fascism. It is a criticism rather in the spirit of Belloc's warning to 'keep a-hold of Nurse, for fear of finding something Worse'. Whether it is fair or not, the fact that it has been made indicates the lively debate which surrounds the latest development of empiricism.

From another angle, Gilbert Ryle, Waynflete Professor of Metaphysical Philosophy at Oxford, has continued the demolition of classical metaphysics. *The Concept of Mind* (1949) attacks particularly the 'official theory' that there is a 'mind-stuff' as well as a bodily or material stuff. The notion that there is an occult stream of consciousness derives from what William Temple calls in another connection 'the Cartesian *faux pas*'—the dualism which postulates a mental realm on the one hand and a physical realm on the other, so that behind the physical behaviour (of human beings) is to be found a ghostly operator, a manipulator of occult forces. Gilbert Ryle describes the official theory 'with deliberate abusiveness, as

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"the dogma of the Ghost in the Machine". I hope to prove that it is entirely false, and false not in detail but in principle. It is not merely an assemblage of particular mistakes. It is one big mistake and a mistake of a special kind. It is, namely, a category-mistake. It represents the facts of mental life as if they belonged to one logical type or category (or range of types or categories), when they actually belong to another. The dogma is therefore a philosopher's myth.¹ And, from this point of departure, Professor Ryle sets out, not to increase what we know about minds, 'but to rectify the logical geography of the knowledge we already know'. And, with a wealth of happy imagery, he attempts to reduce to absurdity the portentous way in which philosophers and (many) psychologists argue as if they had a specially forged key which admitted them to the secret chambers of the 'mind' from the exploration of which they returned able to speak with authority about what went on within them. Ordinary people in their ordinary affairs make no such claim, but are not less able to understand the motives and make sense of the actions of human beings they encounter: witness the shrewdness of the magistrate on his bench, the policeman on his beat, the huckster in the market place. And novelists, dramatists, biographers and historians have felt able to make known to their readers the thoughts, ambitions and desires of the characters with which they were dealing, without recourse to the 'ghost in the machine', but simply by describing their actions, gestures, looks and language.

When psychologists began to construct a science of the mind parallel to Newtonian science, and founded upon its axioms, they discovered (though they did not always admit this), that there were no other data than descriptive ones upon which to rely as far as other human beings were concerned. It was true that they were afraid that simply by *describing* what they saw of human behaviour and making generalizations about it, they might be reducing the human persons to something merely mechanical. 'But the influence of the bogey of mechanism has for a century been dwindling because, among other reasons, during this period the biological sciences have established their title of "sciences". The Newtonian system is no longer the sole paradigm of natural science. Man need not be degraded to a machine by being denied to be a ghost in a machine.

¹ Op. cit., London, 1949, pp. 15-16.

GILBERT RYLE

He might, after all, be a sort of animal, namely, a higher mammal. There has yet to be ventured the hazardous leap to the hypothesis that perhaps he is a man.¹

This line of analysis, which bears, in technique at least, a close resemblance to behaviourism, seems to issue naturally from the attack made by Bertrand Russell, A. J. Ayer and others upon the notion of the Self—though it is a destruction of the notion of the Self only in so far as it rests upon an invisible, intangible, inaudible entity 'mind' behind the body appearances. But when Bertrand Russell asks, 'What do we know of Mr. Smith?' and answers that we know nothing of him, except the gestures we witness, the words we hear, and his discontinuous appearances in a variety of guises and clothes, then he is anticipating Gilbert Ryle. For Ryle is arguing realistically that the data of philosophers and psychologists in this matter are nothing more than the data of common experience, the data of teacher, shopkeeper, lover—

*Young men's love then lies
Not truly in their hearts, but in their eyes.*

He says, 'Overt intelligent performances are not the clues to the workings of minds: they are those workings.' And again, 'I discover that there are other minds in understanding what people say and do'. He is, in fact, doing what he promised to do, telling us that the source of mental phenomena is not where we thought it was.

Of course, the restoration of a human unity, and the abandonment of the Cartesian dualism, would be a valuable step forward. But can it really be done by empirical methods, or does it demand some presuppositions of the type which empiricism is designed to resist? Gilbert Ryle's reduction of intellectual activities to the process of saying things to oneself or to others, reveals that what he offers in replacement of the Cartesian dualism is thin indeed. In stepping back into a pre-Cartesian world one risks landing in an extremely primitive one. Historically, the Cartesian dualism was no accident. The complexities of human behaviour are such that there was then no alternative but to make such distinctions between the physical and mental as would enable us to make better sense of human

¹ *Ibid.*, p. 328.

phenomena by distinguishing their parts. If it is all a myth, then (as Professor Ryle, of course, recognizes), it is a very useful myth. And if it is now to be abandoned, and human and mental and physical phenomena resolved into a new unity, then it must be a unity which does not diminish or dismiss the significance of that which we have, hitherto, thought inexplicable without the introduction of a separate principle, namely mind, to explain it. And this would seem to point from Ryle's behaviourist approach to Wilhelm Stern's psychophysical unity of the person,¹ or Dilthey's descriptive and historical psychology²—to realms of continental scholarship of which modern English philosophy fights shy.

II

Is there a crisis in philosophy? Some dramatic satisfaction is to be obtained by concluding a history of this sort with the assertion, if it can be made and believed, that English philosophy is now at its end, as Bertrand Russell, A. J. Ayer and Ludwig Wittgenstein would have us suppose, and that

*Philosophy, that reach'd the Heav'ns before,
Sbrinks to her bidden cause, and is no more.*

And it is this text from *The Dunciad* which Winston H. F. Barnes, Professor of Philosophy at Durham, prefixes to the first chapter of his modest study *The Philosophical Predicament* (1950). In this most useful work he describes the logical positivists and analysts as modern scholastics, combining scholastic subtlety with modern scientific realism, and refining 'without ceasing upon the existence of tables and chairs and good big inkstands'. But though Barnes attacks logical positivism as incoherent, he does not propose that 'we should bury it and dance on the grave'. The incoherence (and perhaps, we may add, the tedium, too, of its interminable arguments about meaning) is due, he believes, to a 'tenacious grasp of a new insight'. That insight is what Barnes calls its ultra-empiricism, which

¹ Cf. *Person und Sache*, 3 vols., 1923–4.

² Cf. *Wilhelm Dilthey*, *An Introduction* by H. A. Hodges, London, 1944, and by the same author, *The Philosophy of Wilhelm Dilthey*, London, 1952.

it expresses in its principle of verification. It is the verification demanded by the contemporary discovery (itself a most important step forward philosophically) that the logic of meaning and the logic of grammar do not run easily together. But the verification principle has been far too narrowly defined, according to Barnes. It is desirable, of course, that our statements, or as many of them as possible, should be verifiable in experience, and philosophy will gain in clarity, after the excesses of idealism and 'emergence', if we insist upon this. But verification is itself capable of more meanings than one, and if we limit its definition to what is in fact *observable*, such as a lightning flash, or a traffic accident, or a laboratory experiment, then we must exclude remote events in time or space, and many other fields of knowledge and experience (not only metaphysics and religion), as matters about which we can only talk nonsense. Barnes would prefer to see the principle of verification widened to one of *confirmation*. Though we cannot verify in the narrow sense all our meaningful statements, we can seek to confirm them. There are certain concepts, important to science, such as atoms and electrons, which are *logically* unobservables, and therefore the existence of which cannot be verified. About such entities we can only speak meaningfully by way of analogy. We can *conceive* by analogy (not simply *argue* by analogy). There is, therefore, a perfectly proper manner of describing an inferred, but not experienced, reality through 'The Principle of Conceivability'. What the unobservable (and in that sense unverifiable) consists of, can be conceived by analogy with the observed, a principle it will be recalled, which Thomas Reid of the Scottish school also advanced in the face of the ultra-empiricism of Hume and Berkeley.

Barnes submits that Ayer's contention that 'the effective elimination of metaphysics . . . needs to be supported by detailed analyses of particular metaphysical arguments', re-admits at the door the metaphysics he has just thrown out of the window. And Barnes's own attempt to modify *verification* along the lines of *confirmation* and *conceivability*, widens the field of analysis to permit the use and examination of such metaphysical conceptions as God and the Absolute, and is of course intended to.

Logical Positivism and Semanticism have moved beyond the stage of *Language, Truth and Logic*, however, and beyond the critical

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study made by Winston H. F. Barnes, as *Logic and Language* (1951), a symposium edited by A. G. N. Flew, then of Christ Church, Oxford and now at King's College, Aberdeen, shows. It contains some ten essays on various aspects of analysis by the leaders of the new philosophic movement which, its editor claims, 'dominates the philosophy faculties of Oxford, Cambridge, and London, is powerfully represented elsewhere in the United Kingdom, and even has outposts overseas, especially in Australasia and the United States'.¹ A second volume is planned,² and the series is manifestly intended to do for the new school what Muirhead's two volumes of *Contemporary British Philosophy* did for English philosophy in the twenties. *Logic and Language* begins with Gilbert Ryle's twenty year old paper on 'Systematically Misleading Expressions' which reluctantly ends, 'I would rather allot to philosophy a sublimer task than the detection of the sources in linguistic idioms of recurrent misconstructions and absurd theories. But that it is at least this I cannot feel any serious doubt'. The book ends with a remarkable essay by John Wisdom, Professor of Philosophy at Cambridge, on 'Gods' which breathes a spirit of charity and understanding into the debate about what is, and what is not, 'metaphysical nonsense', and in some measure rediscovers the 'sublimer tasks'.

Wisdom begins his profound and subtle study by saying that the existence of God is not an experimental issue in the way it was once. It is not, or not so much, a question of adding up the evidence, of arriving by it at some conclusive proof, nor is belief in God or gods simply a matter of expectation of a world to come, or of the transfer to some dead being, or mythical person, of the awe and affections once felt for an earthly father. These are elements, perhaps, but there is something more: 'though we shall need to emphasize how much "There is a God" evinces an attitude to the familiar, we shall find in the end that it also evinces some recognition of patterns in time easily missed and that, therefore, difference as to there being any gods is in part difference as to what is so and therefore as to the facts, though not in the simple ways which first occurred to us'.³

¹ Op. cit., p. 1.

² Published as *Logic and Language, 2nd Series*, 1953.

³ Op. cit., p. 192.

JOHN WISDOM

He uses a parable of much beauty. Two people return to their neglected garden, and find a few of the old plants thriving vigorously among the weeds, and one exclaims that a gardener must have been coming to tend them in their absence. But they can find no evidence that this is so, except from the beauty and vigour of these plants. They examine the garden carefully 'and sometimes they come on new things suggesting that a gardener comes and sometimes they come on new things suggesting the contrary and even that a malicious person has been at work'. And when at the end one of them persists that a gardener has been at work, and the other denies it just as firmly, it is not a dispute about the evidence—neither expects to see what the other does not see, or imagines that plants behave in other than the usual ways—it is a dispute rather about the *significance*, or the *pattern*, of what they see. It is not an incommunicable significance or pattern, nor something which can be tested or proved by experiment, nevertheless it is something in which one party may be right and the other wrong, despite the impossibility of verification.

It is rather like the situation in which counsel may debate before a judge, not whether a man murdered his wife, but whether his conduct in certain circumstances was reasonable or not. The facts may not be disputed. It is a question of ordering and assessing them, of recognizing, or failing to recognize, illuminating patterns in them. It has affinity to the way in which the critic and the layman, though they both see the same painting, fail to make equal assessments of it. To the layman it conveys nothing. But to the critic, trained in a particular way, it means much. Their opinions are not of equal value, and the critic may, by pointing to this grouping, that line, or this lighting, reveal to the layman what was not apprehended by him before. Or he may fail to do so. The alternative process, of communication to the critic of the non-vision of the layman, is not to be thought of. It is by such considerations as these that John Wisdom moves us to reconsider the matter of belief in gods: he uses also the analogy of lovers. We may feel that a lover's attitude is crazy, and may seek to break it down by criticism, and we may make him alter his attitude and even his love—'but he still loves. We then feel that perhaps it is we who are blind and cannot see what he can see'.

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It is not a matter which is to be settled entirely by language, and does not arise from the mismanagement of language, because the connections upon which belief rest may not only be unspoken, but resist formulation in language. We are then in the presence of some kind of evaluation of experience, John Wisdom implies, some instinct, or intuition, or vision, which enables the believer to seize upon the essential pattern, and which is not to be argued out of him. With infinite tenderness he concludes:

'Many have tried to find ways of salvation. The reports they bring back are always incomplete and apt to mislead even when they are not in words but in music or paint. But they are by no means useless; and not the worst of them are those which speak of oneness with God. But in so far as we become one with Him He becomes one with us. St. John says He is in us as we love one another.'¹

It is easy to pass from this essay, which I am mischievously tempted to describe as existentialist, to the work of Professor Emmet. She is a philosopher who speaks, as does Professor Barnes, of the importance of analogy in metaphysical thinking. Her *Nature of Metaphysical Thinking* (1945) is an important contribution to what we may call the philosophy of crisis. In her view the human mind is not the source of experience—there is a reality, independent of the subject, with which the subject is in relation, and from which the subject gains its experience. An important proof that there exists this relationship with an 'other' arises, she argues, from the fact that the subject does not simply receive sense-impressions, it *verifies* them. Upon receiving sense-data the mind can suspend other activities while it seeks confirmation or denial of what they seem to intimate. Thus, we may say, upon hearing the sound of a bell, the significance of which is not immediately apparent, we may listen with our whole attention to discover whether or not it was the bell of a fire-engine, and if it turns out to be so, then to decide in what direction the bell appears to be travelling. This is a perceptual activity of a deliberate and exploratory kind, which only makes sense if it points to an external reality not automatically 'given'. 'Even sensory verification depends on there being more in the environment than is disclosed through the senses; it depends on the possibility of the enquirer entering into some kind of communica-

¹ *Ibid.*, p. 206.

tion with other minds both as collaborators and in order that language may have meaning. Hence some measure of communication and relationship is a condition for any way in which experience can be significant.¹

For Dorothy Emmet, therefore, the mind is not a mirror, 'but a selective and interpretative activity which builds up symbolic constructions'. And she goes thus far with Professor Ryle that she conceives of the mind, not as a ghostly entity, but as one pole of human activity, the other pole of which is physical activity: i.e. the human organism is a bi-polar entity, or Wilhelm Stern's psycho-physical unity. Great importance lies, for her, with what she calls 'symbolic constructions'. Our sensory activity does not enable us to see that 'other' reality exactly as it is. In our mental activities, we take hold of the patterns of sense-experience, which are borne of the practical needs of the organism to adjust itself to its environment, and use them for *theoretic* ends. We build up in this way a 'highly simplified and selective perspective' of outer reality. Bertrand Russell speaks of much the same kind of process—what our vision tells us is the sun can't be the sun, because the real sun is eight minutes farther on: information about the creaking chair we sit in, is conveyed us by three senses, and it is only by courtesy of the management that this information is amalgamated into one whole real chair in one space, instead of three groups of sense-experience, each in its own space. Not far along this line of reasoning is idealism, but Dorothy Emmet, as we have seen, rejects that solution. Not only is the form-constructing or symbolizing power of the mind meaningless without this external reality, but there are certain mental experiences, such as the irreversibility of time, about which we can do nothing at all, which indicate that the mind is set in a reality not of its own creation, or conditioned by terms it does not itself invent.

It is obligatory to pass from this type of analysis to the argument that if, by sense-experience, and by the theoretic activity of the mind, we are able to apprehend a reality other than that of our minds, then such other human experiences as the religious, the moral, and the aesthetic, equally point to relationship with a reality 'qualitatively other than ourselves, and as having some absolute

¹ Op. Cit., p. 206.

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character which impresses and challenges us'. Dorothy Emmet makes a sympathetic examination of the relationship of theology, philosophy and history and attempts to reconstruct in her own terms the Thomist *Analogy of Entis*.

Because her work was written during the Second World War, it is rather more sensitive to the omens of decline in European civilization than most works written since. 'We no longer live in a common civilization which speaks a common intellectual language,' she writes. The future will probably see, not a decline, but an increase of the hatreds and suspicions which prove such a formidable barrier to communication between peoples. It will take a long time for a coherent unity to work itself out, for 'our basic suppositions . . . are in process of drastic reconstruction'. The revolution in physics continues: the contribution of the great names to contemporary thought, Einstein, Freud, Marx, Barth, Wittgenstein, is obscured by the fierceness of the partisanship which surrounds them. There is even, perhaps, a kind of 'Proustian entropy' in the world of learning.

But at least Dorothy Emmet seeks to redress that bias which swings English empiricism constantly towards the scientific interpretation of reality. We may enlarge the scope of her attack on contemporary bigotry by saying that there is an empiricist myth too, which arises like the Cartesian man denounced by Gilbert Ryle from the science of the seventeenth century. The Newtonian scientist was perfectly sure that what he observed in nature was what was actually there. There was a sun, there was an earth, there were the moon and the stars: real solid bodies like the atoms defined in *Optics*. Not only did these astral bodies exist, but man saw them actually as they were, with his naked eye. In other words a natural man confronted a natural nature, and the two were in intellectual and spiritual harmony. But if it had been said to the Newtonian scientist that there was no such thing as a natural man or a natural nature, but only a historical man and a historical nature, (in the sense of a nature understood as man is conditioned historically to understand it), he would, I fear, have been indignant at what would have appeared to be an attempt to cloud the issues. The modern empiricist has doubts about the nature of the nature perceived by natural man, yet he never strays far from the belief that persistence

will eventually reveal to him the natural man confronting the natural nature. It is a truth with which empiricism has yet to grapple, that the natural man of sense-perceptions is a myth, a myth wished upon it by history, like the notion of the social contract, or of the free, sovereign savage supposed to exist before society. Our notion of nature is a historical construct and, what is more, it depends upon our reading of the nature, significance and destiny of man; upon an outlook we begin to suck in with our mother's milk, or learn from the prattle of our brothers and sisters around us. Of course, there are philosophies of history as well as histories of philosophy: one needs, as a minimum, to check the absolutist claims of any contemporary philosophy by reference to history, and the histories of philosophy and science, but this historical analysis cannot be regarded as the principal activity of English philosophy. Through the centuries the great debating match has been between empiricism and idealism, with empiricism, realism, or scepticism nearly always rising to dominance. Among modern philosophers R. G. Collingwood made the most consistent effort—one largely disregarded—to plead the cause of the historical approach. His *The Idea of History*, (1946) is a history of philosophies of history, in which he makes the powerful point that, 'From the sixteenth to the nineteenth centuries the main effort of thought was concerned with laying the foundations of natural science, and philosophy took as its main theme the relation of the human mind as subject to the natural world of things around it in space. . . . But in the eighteenth century people began thinking critically about history, as they had already learnt to think critically about the external world, because history began to be regarded as a special form of thought, not quite like mathematics or theology or science. The result of this reflection was that a theory of knowledge proceeding on the assumption that mathematics or theology or science, or all three together, could exhaust the problems of knowledge in general, was no longer satisfactory.'¹

Perhaps it is the inability of empiricism generally to register the impact of history upon its own forms of thought which tempts it to abandon philosophy, to assert the bankruptcy of the great metaphysical systems of the past, and to deny the possibility of constructing new ones. For if once the notion is accepted that the

¹ Op. cit., 1946, pp. 4-5.

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'natural' man of empiricism, or the 'commonsense' man of realism, are simply seeing 'naturally' or 'sensibly' what the history of thought has predisposed them to see, rather than what actually may be there, then the ground is cut from beneath empiricism. For then it is man in history, rather than man in relation to nature, which is the proper subject of philosophy, and we have to unwind the cocoon of history from around man before we can begin to see the Nature of which the empiricists speak, apart from its historical setting. This would seem to me to be one of the great tasks offered to English philosophers of the future, and far from excluding system-making would seem to encourage it: for it is through the construction of systems that we can come to grips with man, nature and history in their collectivity. As R. G. Collingwood wrote in that odd, cranky work of his, *The New Leviathan* (1942), which it is so rewarding to browse through—'It is in the world of history, not in the world of Nature, that man finds the central problems he has to solve. For twentieth-century thought the problems of history are the central problems; those of Nature, however interesting they may be, are only peripheral.'¹

Perhaps this exaggerates a little: but I myself am inclined to ascribe the existentialist revolt against abstract scientific and philosophic systems, which write off the living person in his human situation, in part to the search for the historical man. English philosophy, however, has still to reckon with Heidegger, Jaspers, Marcel and Sartre, whose schools have acquired weight on the continent. So far their influence in Britain and the U.S.A. has been small and is limited to theological circles.

With this it is convenient to conclude, and on a more optimistic note than the philosophies of crisis would seem to make possible. English philosophy is not at an end: the story is an unfinished one. There is no need to rule a red line and draw up a final balance. Even now the philosophers who will stir the future are sharpening their wits and their pens in colleges and libraries, in porticoes and common-rooms. For them, the humanists, this is the time of the challenge of all challenges, for the debate about meaning and verification pales into insignificance before the attack on European learning and culture from so many quarters. What matter, however, so long as we go on? The greatest days may be to come.

¹ Op. cit., p. 129.

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Realists and Nominalists, M. H. Carré, Oxford, 1946.

Medieval Philosophy, F. C. Copleston, Methuen, 1952.

Cambridge Medieval History, vol. VI, 1911.

Documents of the Christian Church, ed. Henry Bettenson, Oxford, 1943.

Part Four: Books published since 1600 with Chronological Tables

This is a list of all the works of philosophy, science and theology mentioned in the text and published after 1600. Books published long after writing are not included. Some contemporary events have been placed in their chronological position in the list.

1577-80 Drake circumnavigates the globe.

1588 Spanish Armada repulsed.

1600 East India Company founded.

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1600 Gilbert, *De Magnete.*
1601 Earl of Essex beheaded.
1605 Gunpowder Plot.
1605 Bacon, *Advancement of Learning.*
1608 First practical telescope.
1609 Kepler, *Astronomia Nova.*
1610 Galileo's microscope.
1611 Authorized Version of the Bible.
1616 Death of Shakespeare.
1620 Voyage of the Mayflower.
1620 Bacon, *Novum Organum.*
1623 First Folio of Shakespeare's Plays.
1623 Bacon, *De Augmentis.*
1624 Herbert, *De Veritate.*
1625 Accession of Charles I.
1627 Bacon, *New Atlantis.*
1628 Harvey, *Exercitatio Anatomica de motu cordis et sanguinis.*
1632 Galileo, *Dialogo.*
1634 Milton's *Comus* produced at Ludlow Castle.
1637 Hampden's 'ship-money' trial.
1637 Descartes, *Discours sur la méthode.*
1641 Descartes, *Meditationes de prima philosophia.*
1642 Civil War begins.
1642 Hobbes, *De Cive.*
1642 Cudworth, *Discourse concerning the true notion of the Lord's Supper.*
1644 Milton, *Aeropagitica.*
1649 Execution of Charles I.
1650 Hobbes, *De Corpore Politico.*
1651 Hobbes, *Leviathan.*
1653 More, *Antidote against Atheism.*
1653 Cromwell becomes Protector.
1655 Hobbes, *De Corpore.*
1655 Expedition against Spanish West Indies.
1658 Hobbes, *De Homine.*
1659 More, *Immortality of the Soul.*
1660 Restoration of the Monarchy.
1660 Royal Society founded.

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1661 Boyle, *The Sceptical Chymist*.
1663 Boyle, *Usefulness of Experimental Natural Philosophy*.
1665 The Great Plague.
1666 The Fire of London.
1667 Milton's *Paradise Lost*.
1667 Sprat, *History of the Royal Society*.
1675 Traherne, *Christian Ethicks*.
1668 More, *Divine Dialogues*.
1678 Cudworth, *True Intellectual System*.
1678 Bunyan's *Pilgrim's Progress*.
1678 Oates's popish plot.
1674 Purcell organist at Westminster Abbey.
1684 Samuel Pepys made president of the Royal Society.
1685 Jeffreys' Bloody Assizes.
1687 Newton, *Principia*.
1688 The Glorious Revolution.
1689 William and Mary proclaimed.
1689 The Toleration Act.
1689 Locke, *Epistola de Tolerantia*.
1690 Locke, *Two Treatises of Civil Government*.
1690 Locke, *Essay concerning Human Understanding*.
1691 Ray, *Wisdom of God in the Works of Creation*.
1693 National Debt first funded.
1704 Newton, *Optics*.
1704 Victory of Marlborough at Blenheim.
1707 Union of England and Scotland.
1709 Berkeley, *Essay towards a New Theory of Vision*.
1710 Berkeley, *Treatise concerning the Principles of Human Knowledge*.
1710 Wren's St. Paul's Cathedral completed.
1713 Berkeley, *Three Dialogues between Hylas and Philonous*.
1720 South Sea Bubble.
1721 Berkeley, *De Motu*.
1726-7 Swift's *Gulliver's Travels*.
1732 Pope, *Essay on Man*.
1733 Kay's flying shuttle invented.
1734 Berkeley, *The Analyst*.
1735 Coke first used in smelting iron.
1736 Repeal of laws against witchcraft.

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1736 Butler, *Analogy of Religion*.
1738 Bach's Mass in B Minor completed.
1739 John Wesley begins field preaching.
1739-40 Hume, *Treatise of Human Nature*.
1741 Hume, *Essays, Moral and Political*.
1742 Handel's *Messiah* produced at Dublin.
1745 Jacobite Rebellion.
1748 Hume, *Essay concerning Human Understanding*.
1748 Fielding's *Tom Jones*.
1750 Gray's *Elegy*.
1751 Hume, *Enquiry concerning the Principles of Morals*.
1752 New Style calendar introduced into England.
1751-65 Publication of French *Encyclopaedia*.
1752 Hume, *Political Discourses*.
1755 Johnson, *Dictionary*.
1756 Burke, *Vindication of Natural Society*.
1756 Seven years' war begins.
1759 Smith, *Theory of Moral Sentiments*.
1759 British conquest of Bengal.
1759 Victory and death of General Wolfe.
1761 First Canal completed.
1762 Rousseau's *Contrat Social*.
1764 Reid, *Enquiry into the Human Mind*.
1765 Hargreaves's spinning jenny.
1765-9 Blackstone, *Commentaries on the Laws of England*.
1770 Goldsmith's *Deserted Village*.
1771 *Encyclopaedia Britannica*, first edition.
1773 Boston Tea Party.
1776 Smith, *Wealth of Nations*.
1776 Bentham, *Fragment on Government*.
1776 American Declaration of Independence.
1779 Hume, *Dialogues concerning Natural Religion*.
1781 Cornwallis surrenders at Yorktown.
1781 Kant, *Critique of Pure Reason*.
1785 Reid, *Essays on the Intellectual Powers of Man*.
1785 Paley, *Moral and Political Philosophy*.
1787 Gibbon's *Decline and Fall of the Roman Empire* completed.

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1788 Opening of the trial of Warren Hastings.
1788 First appearance of *The Times*.
1789 Bentham, *Introduction to the Principles of Morals and Legislation*.
1789 French revolution begins.
1789 Darwin, Erasmus, *The Loves of the Plants*.
1791 Tom Paine's *Rights of Man*.
1791 Boswell's *Life of Johnson*.
1791 Mackintosh, *Vindiciae Gallicae*.
1792 Stewart, *Elements of the Philosophy of the Human Mind*, vol 1.
1793 Goddess of Reason worshipped in Notre Dame.
1794 Paley, *Evidences of Christianity*.
1798 Lyrical Ballads.
1798 Malthus, *Essay on the Principle of Population*.
1799 Napoleon declared First Consul.
1803 Resumption of war between England and France.
1805 Battle of Trafalgar.
1811 Luddite riots.
1811 Shelley's *The Necessity of Atheism*.
1813 Owen, *New View of Society*.
1814 Beethoven's Seventh Symphony.
1815 The hundred days: battle of Waterloo.
1817 Ricardo, *Principles of Political Economy and Taxation*.
1817 Coleridge, *Biographia Literaria*.
1819 Shelley's *Prometheus Unbound*.
1819 Peterloo massacre.
1821 James Mill, *Elements of Political Economy*.
1825 Stockton and Darlington Railway.
1826 Whateley's *Elements of Logic*.
1828 Foundation of Metropolitan Police.
1829 James Mill, *Analysis of the Phenomena of the Human Mind*.
1829 Hamilton, *Philosophy of the Unconditioned*.
1829 English ban Suttee in India.
1830 Mackintosh, *Dissertation on the Progress of Ethical Philosophy*.
1830 Lyell, *Principles of Geology*.
1830 Comte, *Cours de Philosophie Positive*.
1830 Herschel, *Discourse on the Study of Natural Philosophy*.
1830 Cobbett's *Rural Rides*.

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1832 Passage of First Reform Bill.
1833 Slavery abolished in the British Empire.
1834 Beginning of Parliamentary grants for Education.
1835 James Mill, *Fragment on Mackintosh*.
1837 Whewell, *History of the Inductive Sciences*.
1837 Carlyle, *French Revolution*.
1838 Carlyle, *Sartor Resartus*.
1840 Carlyle, *Heroes and Hero-Worship*.
1840 Penny Post.
1842 Act banning chimney boys.
1843 J. S. Mill, *System of Logic*.
1843 Soren Kierkegaard's *Either/Or*.
1844 Rochdale Pioneers Co-operative society founded.
1845 Newman, *Essay on the Development of Christian Doctrine*.
1846 Repeal of Corn Laws.
1848 Communist Manifesto.
1848 Last Chartist demonstration.
1848 Maurice, F. D., *Moral and Metaphysical Philosophy* (in *Encyclopaedia Metropolitan*).
1848 J. S. Mill, *Political Economy*.
1849 Californian gold rush.
1849 Dickens, *David Copperfield*.
1850 Tennyson's *In Memoriam*.
1850 Wordsworth's *The Prelude*.
1850 Spencer, *Social Statics*.
1851 Great Exhibition.
1854 Crimean War.
1855 Walt Whitman, *Leaves of Grass*.
1857 Indian Mutiny.
1858 Hamilton's *Lectures*.
1859 Darwin, *Origin of Species*.
1859 J. S. Mill, *Thoughts on Parliamentary Reform*.
1859 J. S. Mill, *On Liberty*.
1860 *Essays and Reviews* published.
1861 Serfs emancipated in Russia.
1861-2 Australia crossed from sea to sea.
1861 American Civil War begins.
1862 Spencer, *First Principles*.

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1863 J. S. Mill, *Utilitarianism*.
1863 T. H. Huxley, *Man's place in Nature*.
1864 Spencer, *Principles of Biology*.
1864 Newman, *Apologia pro Vita Sua*.
1864 Garibaldi visits England.
1865 J. S. Mill, *Examination of Sir William Hamilton's Philosophy*.
1865 Stirling, *Secret of Hegel*.
1867 1867 Act creating self-governing Dominion of Canada.
1868-9 Tolstoi's *War and Peace*.
1869 J. S. Mill, *Subjection of Women*.
1869 Girton College for Women opened.
1869 Suez Canal opened.
1870 Newman, *Essay in Aid of a Grammar of Assent*.
1870 Elementary Education Act.
1871 Albert Hall opened.
1871 Stanley finds Livingstone.
1871 Paris Commune.
1871 Darwin, *Descent of Man*.
1873 Sir Edward Landseer dies.
1873 J. S. Mill, *Autobiography*.
1875 Telephone invented.
1876 Wagner: first complete performance of *The Ring*.
1876 International Conference on Africa.
1877 Bradley, *Ethical Studies*.
1883 Green, *Prolegomena to Ethics*.
1883 Bradley, *Principles of Logic*.
1884 Spencer, *The Man versus the State*.
1885 Gifford lectures established.
1885 Caird, *The Social Philosophy and Religion of Comte*.
1886 Daimler's internal combustion engine.
1887 Queen Victoria's jubilee.
1889 Adolf Hitler born at Braunau.
1889 Caird, *The Critical Philosophy of Kant*.
1891 Hardy's *Tess of the D'Urbervilles*.
1892 Caird, *Essays on Literature and Philosophy*.
1893 Caird, *Evolution of Religion*.
1893 T. H. Huxley, *Evolution and Ethics*.
1893 Bradley, *Appearance and Reality*.

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1895 Bridget Cleary burnt as a witch in Co. Tipperary.
1895 H. G. Wells, *Time Machine*.
1895 Green, *Principles of Political Obligation*.
1898 Whitehead, *Treatise on Universal Algebra*.
1899 Elgar's Enigma Variations.
1899 Boer War begins.
1900 Commonwealth of Australia Act passed.
1900 Freud, *Die Traumdeutung*.
1901 Wright Brother's first flight.
1901 Wireless signals first transmitted across the Atlantic.
1902 First performance of Shaw's *Mrs. Warren's Profession*.
1903 Moore, *The Refutation of Idealism*.
1903 Moore, *Principia Ethica*
1903 Russell, *Principles of Mathematics*.
1905 Entente Cordiale with France.
1905 Unsuccessful revolution in Russia.
1907 Bergson, *L'Evolution créatrice*.
1909 People's budget thrown out of House of Lords.
1910 Temple, *The Faith and Modern Thought*.
1910 McTaggart, *A Commentary on Hegel's Logic*.
1910-13 Russell and Whitehead, *Principia Mathematica*.
1911 Blériot flies the Channel.
1911 Temple, *The Nature of Personality*.
1911 Whitehead, *Introduction to Mathematics*.
1912 Moore, *Ethics*.
1912 James, *Radical Empiricism*.
1912 Loss of the *Titanic*.
1912 First National Insurance Act.
1913 Bosanquet, *Value and Destiny of the Individual*.
1913 Haldane, J. S., *Mechanism, Life and Personality*.
1913 D. H. Lawrence, *Sons and Lovers*.
1913 Proust, *À la Recherche du temps Perdu*, first part.
1914 Russell, *Our Knowledge of the External World*.
1914 Outbreak of War.
1915 First Air Raid on an open town in Britain.
1915 Rupert Brooke's *1914 and other Poems*.

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1915 Edith Cavell executed by Germans.
1916 Temple, *Plato and Christianity*.
1917 Temple, *Mens Creatrix*.
1917 Otto, *Das Heilige*.
1917 October—Bolshevik revolution in Russia.
1918 End of First World War.
1918 Spengler, *Untergang des Abendlandes*.
1918 Enfranchisement of women in Britain.
1918 Russell, *Mysticism and Logic*.
1918 Russell, *Roads to Freedom*.
1919 Treaty of Versailles.
1919 United States goes dry.
1919 Atlantic crossed by plane by Alcock and Brown.
1919 Russell, *Introduction to Mathematical Philosophy*.
1920 Alexander, *Space, Time and Deity*.
1920 H. G. Wells *Outline of History*.
1920 Thomson, *System of Animate Nature*.
1920 Einstein, *Relativity, The Special and General Theory*.
1920 Russell, *Practice and Theory of Bolshevism*.
1920 League of Nations founded.
1921 Ireland becomes self-governing.
1921 McTaggart, *The Nature of Existence* (vol. 1).
1921 Russell, *Analysis of Mind*.
1922 Moore, *Philosophical Studies*.
1922 Einstein, *The Meaning of Relativity*.
1922 Freud, *Introductory Lectures in Psychoanalysis*.
1922 T. S. Eliot, *The Waste Land*.
1922 Wittgenstein, *Tractatus Logico-Philosophicus*.
1923 H. G. Wells, *Men Like Gods*.
1923 Occupation of the Ruhr by the French.
1924 Shaw's *St. Joan*.
1924 Wembley Exhibition.
1924 First Labour Government in Britain.
1924 Temple, *Christus Veritas*.
1925 Broad, *Mind and its Place in Nature*.
1925 Successful prosecution over the teaching of Darwinism in Tennessee.
1925 Charlie Chaplin, *The Gold Rush*.

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1926 General Strike in Britain.
1926 T. E. Lawrence's *Seven Pillars of Wisdom*.
1926 Morgan, *Life, Mind, and Spirit*.
1926 Smuts, *Holism and Evolution*.
1927 Sacco and Vanzetti executed in the United States.
1927 Huxley, J., *Religion without Revelation*.
1927 Russell, *Outline of Philosophy*.
1928 Whitehead, *Science and the Modern World*.
1929 Whitehead, *Process and Reality*.
1929 Eddington, *Nature of the Physical World*.
1929 Joad, *Matter, Life and Value*.
1929 Haldane, J. S., *The Sciences and Philosophy*.
1929 Bridges, *Testament of Beauty*.
1930 Jeans, *The Mysterious Universe*.
1930 Broad, *Five Types of Ethical Theory*.
1931 Planck, *The Universe in the light of Modern Physics*.
1931 Financial crisis and formation of National Government in Britain.
1931 Noel Coward's *Cavalcade*.
1932 New Signatures (anthology by Auden, Spender, Lehman, etc., ed. Michael Roberts).
1932 Franklin D. Roosevelt elected President U.S.
1932 Emmet, *Whitehead's Philosophy of Organism*.
1932 Reichenbach, *Atoms and Cosmos*.
1932 Aldous Huxley, *Brave New World*.
1933 Hitler comes to power in Germany.
1933 Toynbee's *A Study of History* (vols. I-III).
1934 Mumford, *Technics and Civilization*.
1934 Temple, *Nature, Man and God*.
1934 Whitehead, *Nature and Life*.
1935 Eddington, *New Pathways in Science*.
1935 Italian conquest of Abyssinia.
1936 Spanish civil war begins.
1936 Crystal Palace, home of 1851 exhibition, burns down.
1936 Zimmer, *The Revolution in Physics*.
1936 Ayer, *Language, Truth and Logic*.
1938 Munich Pact.

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1939 Eddington, *Philosophy of Physical Science*.
1939 Alexander, *Philosophical and Literary Pieces*.
1939-40 Temple, *Readings in St. John's Gospel*.
1939 Outbreak of Second World War.
1940 Russell, *Inquiry into Meaning and Truth*.
1940 T. S. Eliot, *East Coker*, (first of 4 quartets).
1940 Churchill becomes Prime Minister.
1940 Battle of Britain.
1941 Michael Roberts, *Recovery of the West*.
1941 Pearl Harbour.
1942 Collingwood, *The New Leviathan*.
1942 Huxley, J., *Evolution, The Modern Synthesis*.
1942 Beginning of incineration of Jews in Germany.
1944 Leslie Paul, *Annihilation of Man*.
1944 Schrödinger, *What is Life*.
1944 Huxley, J., *On Living in a Revolution*.
1944 Lancelot Law Whyte, *Next Development in Man*.
1945 Atom bomb on Hiroshima.
1945 End of Second World War.
1945 'Save Europe Now' movement founded.
1945 Emmet, *Nature of Metaphysical Thinking*.
1946 Collingwood, *The Idea of History*.
1946 Russell, *History of Western Philosophy*.
1948 Russell, *Human Knowledge: its Scope and Limits*.
1948 Whitehead, *Essays in Science and Philosophy*.
1949 Ryle, *The Concept of Mind*.
1949 Joad, *A Critique of Logical Positivism*.
1949 Russell, *Authority and the Individual*.
1950 Hoyle, *The Nature of the Universe*.
1950 Barnes, *The Philosophical Predicament*.
1951 Flew (ed.), *Logic and Language* (series 1).
1952 Joad, *The Recovery of Belief*.
1953 Flew (ed.), *Logic and Language* (series 2).
1953 Raven, *Science and Religion*.
1953 Wittgenstein, *Philosophical Investigations*.

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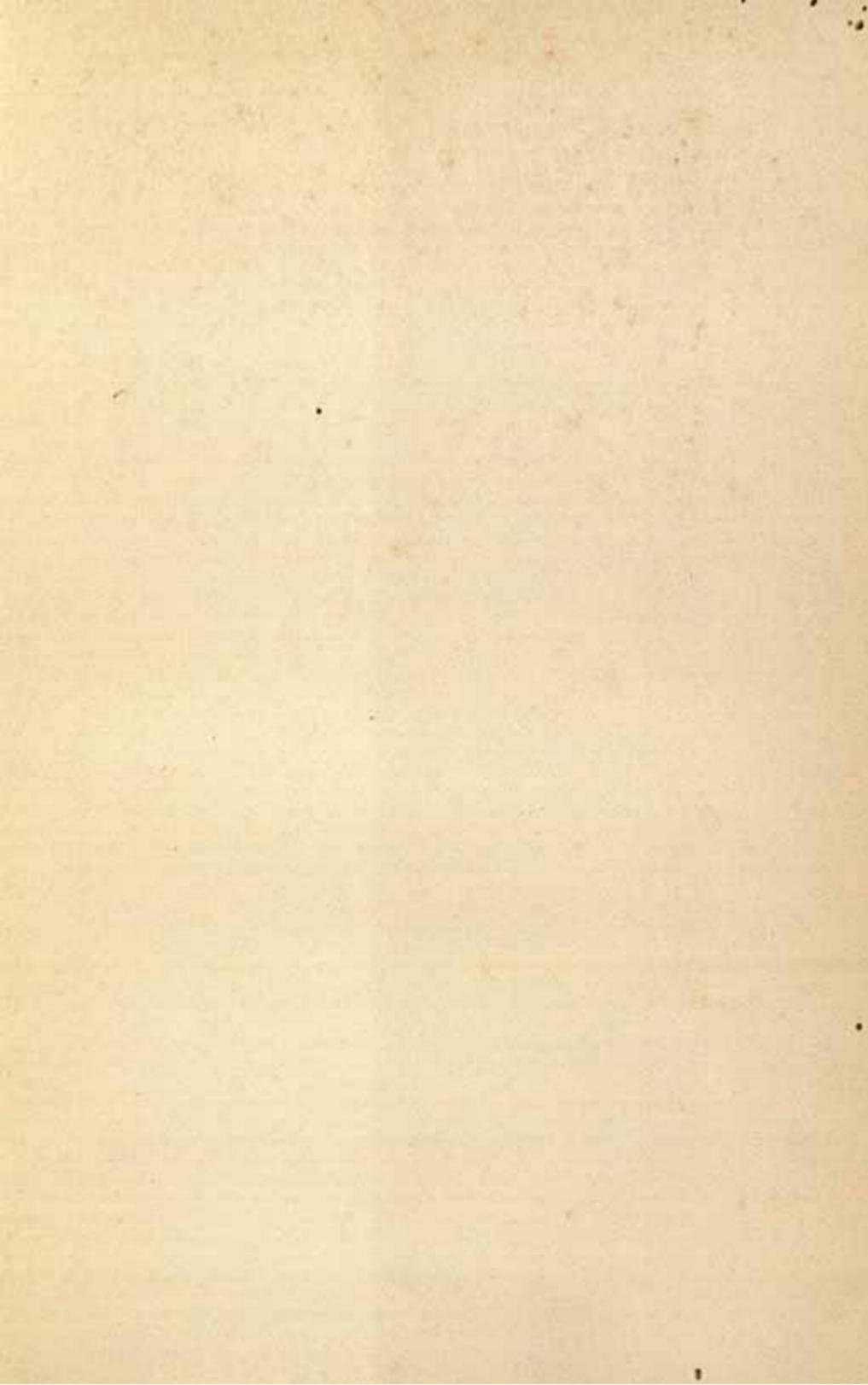
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